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शासकीय जर्नल

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पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

INTRODUCTION

In view of the recent amendment made in the Patents Act, 1970 by the Patents (Amendment) Act, 2005 effective from 01st January 2005, the Official Journal of The Patent Office is required to be published under the Statute. This Journal is being published on weekly basis on every Friday covering the various proceedings on Patents as required according to the provision of Section 145 of the Patents Act 1970. All the enquiries on this Official Journal and other information as required by the public should be addressed to the Controller General of Patents, Designs & Trade Marks. Suggestions and comments are requested from all quarters so that the content can be enriched.

(PROF. (DR) UNNAT P. PANDIT)
CONTROLLER GENERAL OF PATENTS, DESIGNS & TRADE MARKS

6th FEBRUARY, 2026

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THE PATENT OFFICE
KOLKATA, 06/02/2026
Address of the Patent Offices/Jurisdictions
The following are addresses of all the Patent Offices located at different places having their Territorial Jurisdiction on a Zonal basis as shown below:-

1	Office of the Controller General of Patents, Designs & Trade Marks, Bouddhik Sampada Bhawan, Plot No. 32, Sector 14, Dwarka, New Delhi-110078 Phone: (91)(11) 2530 0205, Fax : (91)(22) 24123322 E-mail: cgoffice.in@gov.in	4	The Patent Office, Government of India, Intellectual Property Rights Building, G.S.T. Road, Guindy, Chennai – 600 032. Phone: (91)(44) 2250 2081-84 Fax : (91)(44) 2250 2066 E-mail: chennai-patent@nic.in ❖ The States of Andhra Pradesh, Telangana, Karnataka, Kerala, Tamil Nadu and the Union Territories of Puducherry and Lakshadweep.
2	The Patent Office, Government of India, Boudhik Sampada Bhavan, Near Antop Hill Post Office,S.M.Road,Antop Hill, Mumbai – 400 037 Phone: (91)(22) 24137701 Fax: (91)(22) 24130387 E-mail: mumbai-patent@nic.in ❖ The States of Gujarat, Maharashtra, Madhya Pradesh, Goa and Chhattisgarh and the Union Territories of Daman and Diu & Dadra and Nagar Haveli	5	The Patent Office (Head Office), Government of India, Boudhik Sampada Bhavan, CP-2, Sector –V, Salt Lake City, Kolkata- 700 091 Phone: (91)(33) 2367 1943/44/45/46/87 Fax: (91)(33) 2367 1988 E-Mail: kolkata-patent@nic.in ❖ Rest of India
3	The Patent Office, Government of India, Boudhik Sampada Bhavan, Plot No. 32., Sector-14, Dwarka, New Delhi – 110078 Phone: (91)(11) 25300200 & 28032253 Fax: (91)(11) 28034301 & 28034302 E.mail: delhi-patent@nic.in ❖ The States of Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttar Pradesh, Uttaranchal, Delhi and the Union Territory of Chandigarh.		

Website: www.ipindia.nic.in
www.patentoffice.nic.in

All applications, notices, statements or other documents or any fees required by the Patents Act, 1970 and The Patents (Amendment) Act, 2005 or by the Patents (Amendment) Rules, 2006 will be received only at the appropriate offices of the Patent Office.

Fees: The Fees may either be paid in cash or may be sent by Bank Draft or Cheques payable to the Controller of Patents drawn on a scheduled Bank at the place where the appropriate office is situated.

पेटेंट कार्यालय
कोलकाता, दिनांक 06/02/2026
• कार्यालयों के क्षेत्राधिकार के पते

विभिन्न जगहों पर स्थित पेटेंट कार्यालय के पते आंचलिक आधार पर दर्शित उनके प्रादेशिक अधिकार क्षेत्र के साथ नीचे दिए गए है:-

1	कार्यालय : महानियंत्रक, एकस्व, अभिकल्प तथा व्यापार चिहन, बौद्धिक संपदा भवन, प्लॉट सं. 32, सेक्टर- 14, द्वारका, नई दिल्ली- 110 078, भारत, फोन: (91) (22) 25300205 फ़ैक्स: (91) (22) 24123322 ई. मेल: cgpdtm@nic.in	4	पेटेंट कार्यालय, भारत सरकार इंटेलेक्चुअल प्रॉपर्टी राइट्स बिल्डिंग, इंडस्ट्रियल इस्टेट एसआईडीसीओ आरएमडी गोडाउन एरिया एडजसेन्ट टु ईगल फ्लास्क, जी. एस. टी. रोड, गायन्डी चेन्नई - 600 032. फोन: (91)(44) 2250 2081-84 फ़ैक्स: (91)(44) 2250-2066 ई. मेल: chennai-patent@nic.in ❖ आन्ध्र प्रदेश, तेलंगाना, कर्नाटक, केरल, तमिलनाडु तथा पुडुचेरी राज्य क्षेत्र एवं संघ शासित क्षेत्र, लक्षदीप
2	पेटेंट कार्यालय, भारत सरकार बौद्धिक संपदा भवन, एंटोप हिल डाकघर के समीप, एस. एम. रोड, एंटोप हिल, मुम्बई- 400 037, फोन: (91) (22) 24137701 फ़ैक्स: (91) (22) 24130387 ई. मेल: Mumbai-patent@nic.in ❖ गुजरात, महाराष्ट्र, मध्य प्रदेश, गोवा तथा छत्तीसगढ़ राज्य क्षेत्र एवं संघ शासित क्षेत्र, दमन तथा दीव, दादर और नगर हवेली.	5	पेटेंट कार्यालय, भारत सरकार कोलकाता, (प्रधान कार्यालय) बौद्धिक संपदा भवन, सीपी-2, सेक्टर- V, साल्ट लेक सिटी, कोलकाता-700 091, भारत. फोन: (91)(33) 2367 1943/44/45/46/87 फ़ैक्स:/Fax: (91)(33) 2367 1988 ई. मेल: kolkata-patent@nic.in ❖ भारत का अवशेष क्षेत्र
3	पेटेंट कार्यालय, भारत सरकार बौद्धिक संपदा भवन, प्लॉट सं. 32, सेक्टर- 14, द्वारका, नई दिल्ली- 110 078. फोन: (91)(11) 25300200, 28032253 फ़ैक्स: (91)(11) 28034301, 28034302 ई. मेल: delhi-patent@nic.in हरियाणा, हिमाचल प्रदेश, जम्मू तथा कश्मीर, पंजाब,राजस्थान, उत्तर प्रदेश, दिल्ली तथा उत्तरांचल राज्य क्षेत्रों, एवं संघ शासित क्षेत्र चंडीगढ़		

वेबसाइट: http://www.ipindia.nic.in
www.patentoffice.nic.in

पेटेंट अधिनियम, 1970 तथा पेटेंट (संशोधन) अधिनियम, 2005 अथवा पेटेंट (संशोधन) नियम, 2006 द्वारा वांछित सभी आवेदन, सूचनाए, विवरण या अन्य दस्तावेज़ या कोई शुल्क पेटेंट कार्यालय के केवल उपयुक्त कार्यालय में स्वीकृत होंगे।

शुल्क: शुल्क या तो नगद रूप में या Controller of Patents के नाम में देय बैंक ड्राफ्ट या चेक के द्वारा भेजी जा सकती है जो उसी स्थान के किसी अनुसूचित बैंक में प्रदत्त हो जहाँ उपयुक्त कार्यालय स्थित है ।

SPECIAL NOTICE

18 Months publication as required under Section 11A of the Patents Act, 1970 as amended by the Patents (Amendment) Act, 2005.

Notice is hereby given that any person at any time before the grant of Patent may give representation by way of opposition to the Controller of Patents at appropriate office on the ground and in a manner specified under section 25(1) of the Patents (Amendment) Act, 2005 read with Rule 55 of the Patents (Amendment) Rules, 2006.

Notice is also given that if any interested person requests for copies of the complete specification, drawing and abstract of any application already published, the photocopy of the same can be supplied by the Patent Office as per the jurisdiction on payment of prescribed fees of Rs.10/- per page. If any further details are required to be obtained, the same can be provided by the respective Patent Offices on request.

(PROF. (DR) UNNAT P. PANDIT)
CONTROLLER GENERAL OF PATENTS, DESIGNS & TRADE MARKS

SPECIAL NOTICE

Under the new provision of the Patents Act, 1970 as amended by the Patents (Amendment) Act, 2005 and Rules there under, Publication of the matter relating to Patents in the Official Gazette of India Part III, Section 2 has been discontinued and instead The Official Journal of the Patent Office is being published containing all the activities of The Patent Office such as publication of all the patent applications after 18th months , grant of patents & all other information in respect of the proceedings as required under the provisions of the Patents (Amendment) Act, 2005 and Rules thereunder on weekly basis on every **Friday**.

The Journal is uploaded in the website every Friday. So Paper form and CD-ROM form of the Journal are discontinued from 01/01/2009.

SPECIAL NOTICE

Every effort is being taken to publish all the patent applications under section 11(A) of the Patents Act. However, if duplication of publication of any application is found, then earlier date of publication will be taken for the purpose of provisional protection for applicant and Patent Office will grant Patent not before six months from the date of second publication, provided that there is there is no third party representation.

Early Publication:

The following patent applications have been published under section 11A (2) of The Patents (Amendment) Act 2005 and rule 24A of The Patents (Amendment) Rules, 2006. Any person may file representation by way of opposition to the Controller of Patents at the appropriate office against the grant of the patent in the prescribed manner under section 25(1) of the Patents (Amendment) Act 2005 read with the rule 55 of The Patents (Amendment) Rules, 2006:

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202411046080 A

(19) INDIA

(22) Date of filing of Application :14/06/2024

(43) Publication Date : 06/02/2026

(54) Title of the invention : QUANTUM COMMUNICATION FORTIFICATION: A HYBRID AUTHENTICATION PROTOCOL & SYSTEM

(51) International classification	:H04L0009080000, H04B0010700000, A23L0033160000, H04L0009320000, H04L0069400000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Gautam Shaw
2)Mr. Jaswinder Singh Oberai
3)Dr. Vipin K Rathi

(57) Abstract :
The present invention relates to a secure hybrid authentication method and system for quantum communication fortification in a network using post quantum cryptography and quantum key distribution mechanisms. A central server (300) performs a first layer authentication using post-quantum cryptography mechanism and a second layer authentication using post quantum cryptography and quantum key distribution mechanisms for generating a secure quantum key. The first client (100) and the second client (200) uses the secure quantum key for secure communication. <<Fig.2 >>

No. of Pages : 39 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/03/2025
(21) Application No.202511026198 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NATURAL LEATHER SUBSTITUTE BASED ON BANANA PSEUDOSTEM FIBERS AND METHOD OF PREPARATION THEREOF

(51) International classification	:A01G9/02, A01C1/02, A01G27/00, A01G24/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)VIKAS KALRA

(57) Abstract :
The present invention relates to an innovative plant pot designed to facilitate plant transportation and ensure optimal germination conditions upon delivery. The plant pot comprises a fully dehydrated soil medium and a water-dissolvable seed pouch embedded at an optimal depth within the soil. This configuration ensures that the seed remains dormant and protected during transit, eliminating the need for continuous care. Upon reaching the destination, hydration of the soil dissolves the pouch, allowing the seed to interact with moisture and initiate germination under optimal conditions. The soil composition is formulated to provide essential nutrients upon rehydration, promoting healthy seedling development.

No. of Pages : 24 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/11/2025
(21) Application No.202511108433 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Vision-Based Fall Detection and Emergency Alert System

(51) International classification	:B60R 1/20, H04N 23/00, H04N 23/60, H04N 101/00, H04N 23/957
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Arun Kashyap
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6)Rudra Kumar Sinha
7)Mayank Kumar Mongia

(57) Abstract :
The invention relates to a vision-based fall detection and emergency alert system that utilizes computer vision and deep learning to detect and respond to fall events in real-time. The system comprises a camera module for capturing video, an AI processor for analyzing body posture and motion trajectory, and an alert module for notifying caregivers or emergency services. It operates autonomously without requiring wearable devices, thereby ensuring continuous and passive monitoring. The AI algorithm distinguishes normal activities from actual falls based on motion speed, angle variation, and inactivity duration. Upon confirmation, the system issues a voice prompt and sends immediate alerts through GSM, Wi-Fi, or mobile applications, ensuring timely medical assistance and enhanced personal safety.

No. of Pages : 14 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/12/2025
(21) Application No.202511125066 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "AI-ENABLED PANCHAKARMA THERAPY MANAGEMENT SYSTEM"

(51) International classification	:G16H 10/60, G16H 40/67, G16H 40/20, G16H 50/20, A61B 5/024
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Akanksha Khantwal
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4)Utkarsh Arora
5)Shaurya Vardhan Yadav
6)Shubham Ojha
7)Karan Siwach

(57) Abstract :
The invention provides an AI-enabled Panchakarma therapy management system that automates dosha diagnosis, therapy scheduling, queue management, wearable data integration, and secure medical record handling. Patient symptoms are analyzed using natural language processing and machine learning models to determine probable dosha imbalances. Based on the diagnostic output, the system recommends suitable Panchakarma therapies and automatically allocates optimized time slots through an intelligent scheduling engine. Real-time queue updates are delivered via WebSocket communication channels, enabling transparent visibility for patients and practitioners. Wearable device data, including heart rate, sleep quality, and activity levels, is integrated to refine therapy recommendations and enhance personalization. All patient records, therapy logs, and prescriptions are stored using blockchain-based hashing for tamper-proof, immutable data management. The system provides patient dashboards, practitioner interfaces, and a secure, data-driven digital infrastructure that modernizes Ayurvedic therapy workflows while ensuring efficiency, accuracy, and trust.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/05/2025
(21) Application No.202511047265 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : RFID-ENABLED SMART CARD SYSTEM AND A METHOD THEREOF

(51) International classification	:H04W12/06, G06Q20/40, G06F21/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Manoranjan Kumar
3)Vinay Shankar Pandey
4)Preeti Verma
5)Ajay Kumar Sharma

(57) Abstract :
The present disclosure relates to a RFID-enabled smart card system (100) and method (200) for secure, real-time identity verification, access control, cashless transactions, and resource management. The system (100) comprises a RFID reader (102), a microcontroller (104) with subunits including an authentication subunit (104a) for validating identifiers with an encryption technique and dual authentication, a processing and control subunit (104b) for parallel execution of card reading, PIN verification, and communication tasks, a memory subunit (104c) for credential and transaction storage, an analytics subunit (104d) for generating operational insights and fraud detection, and a communication handling subunit (104e) for real-time GSM, GPRS, or HTTP data exchange. The method (200) performs reading, encrypted validation, dual authentication, parallel task execution, real-time display, and server synchronization. The disclosure enhances security, reduces latency, and supports large-scale multi-domain deployment. Figure 1

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/12/2025
(21) Application No.202511126680 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “SMART NANO-CATALYST LIBRARY FOR SELECTIVE PHARMACEUTICAL SYNTHESIS”

(51) International classification	:B82Y30/00, B82Y40/00, B01J35/45, G16C60/00, B01J31/00, B01J23/00, B01J27/00, B01J29/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(72)**Name of Inventor :**
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2)Dr. NIDHI DHAMA

(57) Abstract :
The present invention relates to a smart nano-catalyst library integrated with an artificial intelligence–based catalyst selection system for selective and sustainable pharmaceutical synthesis. The invention provides a modular collection of engineered nano-catalysts, including metallic nanoparticles, metal–organic frameworks, and carbon-based nanomaterials, designed to perform key transformations such as carbon–carbon coupling, oxidation, reduction, and amidation under mild and environmentally friendly conditions. An AI-driven prediction engine recommends the optimal nano-catalyst for a given reaction based on trained reaction–catalyst datasets, thereby reducing experimental trial-and-error. The selected catalyst facilitates high yield, improved selectivity, and reduced by-products, while being recyclable for multiple cycles. The invention enables efficient drug synthesis, promotes green chemistry practices, and reduces cost and time in pharmaceutical research and development.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131156 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “A system and a method for producing subconscious and frequency embedded music”

(51) International classification	:A61M 21/00, H04S 7/00, G10H 1/00, H04R 25/00, A61M 21/02	(71)**Name of Applicant :** **1)Ria Gupta** Address of Applicant :7 Jaipur estate, Nizamuddin East, Hazrat Nizamuddin, South Delhi, 110013. Delhi Delhi India (72)**Name of Inventor :** **1)Ria Gupta**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present invention relates to a system and method are disclosed for producing subconscious and frequency-embedded music designed to influence emotional, cognitive, or physiological states through inaudible affirmations and neuroacoustic modulation. The system comprises an input module configured to receive user-defined affirmations corresponding to specific goals; an audio processing module employing psychoacoustic and signal processing algorithms to render the affirmations imperceptible to conscious hearing while retaining subconscious perceptibility; a frequency generation module that synthesizes binaural, isochronic, or carrier-based tones aligned with brainwave frequency bands for neural entrainment; and a mixing module that adaptively integrates affirmation and frequency layers beneath a foreground music track using dynamic masking and amplitude control. The resultant audio output is exported as a standard-format music file that embeds subconscious affirmation and frequency content for playback during ordinary listening. The corresponding method includes defining listener goals, recording affirmations, applying psychoacoustic masking and modulation techniques, generating frequency-aligned tones, embedding processed layers beneath musical content, and exporting a composite track that facilitates subconscious influence and neuroacoustic entrainment through natural music listening experiences.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131157 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NURSE MOBILE ROBOT WITH I APF, IMPROVED TANGENT BUG, LOG BARRIER CONTROL AND BOND GRAPH FDI

(51) International classification	:G05D 1/02, B25J 9/16, B25J 5/00, B25J 11/00, G01S 17/931
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A nurse mobile robot system for autonomous and fault-tolerant navigation in hospitals is disclosed. The robot comprises a circular four-wheel differential-drive base powered by planetary-geared DC motors with RMCS-2303 drivers, an onboard computer running ROS Noetic with Arduino-based actuation, a Hokuyo UTM-30LX LiDAR, a Kinect RGB-D sensor, and a 5-DOF Dynamixel robotic arm. Sensor fusion of LiDAR and RGB-D data provides state and obstacle estimation. An Improved Artificial Potential Field integrated with reinforcement learning and an Improved Tangent Bug algorithm generate local and global motion commands, which are tracked by a log-barrier Lyapunov controller enforcing minimum obstacle clearance. A bond-graph analytical redundancy relation-based FDI module detects actuator faults and reconfigures wheel actuation online, maintaining bounded tracking error. The system enables safe multi-waypoint delivery of medical items in dynamic hospital environments with reduced human supervision.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131162 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A TRUST-BASED DEVICE PAIRING SYSTEM FOR RE-AUTHENTICATION IN PERSONAL MOBILE HOTSPOTS

(51) International classification	:H04W 12/06, H04L 9/32, H04L 29/06, H04L 9/08, H04W 12/041
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Mr. Kamal Preet Singh

(57) Abstract :
The present invention relates to a trust-based device pairing system for re-authentication in personal mobile hotspots. A mobile hotspot device incorporates a Trust Establishment Module that engages in a secure pairing process with a client device via cryptographic exchanges, generating authentication metadata including a unique device identifier and a cryptographic token. A Trusted Device Registry securely stores this metadata in encrypted form, independent of transient Wi-Fi credentials, while a Secure Re-Authentication Module verifies trust upon reconnection by querying the registry. A Hotspot Coordination Layer subsequently grants network access when trust is confirmed. The invention employs asymmetric encryption and periodic challenge-response protocols to ensure a persistent, secure trust relationship in the technical field of mobile communications and hotspot security.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131164 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE HEALTH MONITORING AND POSTURE CORRECTION DEVICE AND RELATED METHODS

(51) International classification	:A61B5/00, A61B5/02, A61B5/11, A61B5/318
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Prateek Kumar Singhal

(57) Abstract :
A wearable device is designed to monitor health and correct posture by continuously measuring heart rate, blood oxygen saturation, and ambient temperature. It includes an ECG monitor for early detection of cardiac issues and a posture correction module that provides feedback to encourage proper form. The device also features a communication system to transmit health data in real-time during emergencies. Additionally, a system is provided that includes a remote server to receive and analyze health data, offering insights into trends and potential health risks. FIG 01.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131165 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A REAL-TIME VEHICLE COMPLIANCE VERIFICATION AND RISK-BASED SERVICE AUTHORIZATION SYSTEM

(51) International classification	:G06N 7/02, G06N 7/00, B60L 53/66, G06Q 10/06, G06Q 50/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Mr. Kamal Preet Singh

(57) Abstract :
A real-time vehicle compliance system comprises an Identification and Detection Module that captures a unique vehicle identifier using sensor-based identification, a Real-Time Compliance Evaluation Layer that aggregates regulatory data from multiple sources to generate a continuously updated composite compliance score, and a Risk-Based Decision Engine that applies weighted probabilistic and fuzzy logic models to compute a risk score for determining full, conditional, or denied service access. The Service Control and Authorization Unit translates this outcome into control signals for regulated mechanisms such as fuel dispensers, charging stations, or access gates, while an optional Recording and Notification Module logs the evaluation data for oversight. The invention provides a modular, technology-agnostic integration architecture enabling independent or coordinated operation of its components for enhanced real-time vehicle compliance verification.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131182 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN OPTIMIZED BIFEO3 SYNTHESIS METHOD FOR IMPROVED FERROELECTRIC AND MAGNETIC PROPERTIES

(51) International classification :C01G49/02, C01G49/08
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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12)Pappu Kumar

(57) Abstract :
The present invention provides a development of an optimized synthesis technique for bismuth ferrite ($BiFeO_3$) intended to improve its ferroelectric and magnetic properties for multifunctional applications. In the optimized process, the use of stoichiometrically precise precursors, modified sol-gel techniques, as well as sintering conditions, reduces the formation of unwanted phases and bismuth evaporation. In the optimized process, careful temperature control of calcination and sintering ensures collective growth of the grains, increased crystallinity, and fewer defects. This is evident from the structural characterization, which reveals single-phase rhombohedral $BiFeO_3$ with lower distortions in the lattice. From electric measurements, the process demonstrates improved remnant polarization, low leakage current, and higher resistance to electric breakdown for a broad spectrum of frequencies. In the optimized process, superparamagnetism, which rises with lowered ferromagnetic characteristics, has been measured downstream due to the optimized size of the grains and defects, which contribute to spin canting. Compared to conventional synthesis procedures, the optimized process demonstrates consistency in material quality with outstanding multiferroic property performance. The synthesized process has the capability of generating scalable, more affordable, cost-effective bismuth ferrite for spintronics, memory, sensing, other device modules. FIG.1

No. of Pages : 13 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131194 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Smart Solar-Powered Beeping Sensor Device for Preventing Wildlife and Birds from Crop Raiding in Rural Agricultural Fields rotation

(51) International classification	:A01M 29/16, A01M 29/18, G08B 13/19, A01M 29/10, A01M 29/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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9)Rajesh Chandra

(57) Abstract :
[505] The present invention introduces an innovative solar-powered sensor device that integrates infrared motion detection, acoustic sensing, and automated deterrence mechanisms to prevent crop raiding by wildlife and birds in rural agricultural fields. This eco-friendly system employs non-lethal auditory and visual signals to effectively dissuade animal intrusion while ensuring biodiversity conservation and sustainable agriculture practices. [510] The device features a comprehensive sensor architecture that combines passive infrared (PIR) motion detectors, sound recognition modules, and solar photovoltaic panels for autonomous operation in off-grid environments. Upon detecting animal movement along field boundaries, the system triggers high-frequency beeping and flashing light sequences to deter potential crop raiders without causing harm. [515] Preliminary field evaluations demonstrate significant reductions in crop damage incidents and enhanced monitoring efficiency compared to traditional manual patrolling or scarecrow-based techniques. The solar-powered design ensures low-cost, sustainable operation, making it particularly suitable for rural farming communities facing wildlife conflict challenges. [520] This invention aligns with national initiatives promoting sustainable agriculture, rural innovation, and self-reliance. Future enhancements will incorporate AI-based image recognition for species identification and data analytics for real-time intrusion mapping, further optimizing the system's effectiveness and scalability. [525] By offering a humane, automated solution for mitigating human-wildlife conflict, this device contributes to food security, biodiversity preservation, and improved rural livelihoods. The solar-powered sensor technology presents a promising approach for fostering ecological balance and sustainable agricultural practices in regions where farmlands interface with wildlife habitats. FIELD OF THE INVENTION [501] The present invention relates to a solar-powered automated sensor device designed to prevent crop raiding by wildlife and birds in rural agricultural fields. The system integrates infrared motion detection, acoustic sensing, and non-lethal deterrence mechanisms to mitigate human-wildlife conflict and promote sustainable agriculture practices. [505] The invention encompasses a comprehensive sensor architecture that combines passive infrared (PIR) motion detectors, sound recognition modules, and solar photovoltaic panels for autonomous operation in off-grid environments. Upon detecting animal intrusion along field boundaries, the device triggers auditory and visual deterrent signals to dissuade potential crop raiders without inflicting harm. [510] This eco-friendly technology aims to reduce crop damage incidents, enhance monitoring efficiency, and ensure biodiversity conservation in rural farming communities facing wildlife conflict challenges. The solar-powered design enables low-cost, sustainable operation, making it particularly suitable for remote agricultural regions. [515] The invention aligns with national initiatives promoting sustainable agriculture, rural innovation, and self-reliance. Future enhancements will incorporate AI-based image recognition for species identification and data analytics for real-time intrusion mapping, further optimizing the system's effectiveness and scalability. [520] By offering a humane, automated solution for mitigating human-wildlife conflict, this device contributes to food security, biodiversity preservation, and improved rural livelihoods. The solar-powered sensor technology presents a promising approach for fostering ecological balance and sustainable agricultural practices in regions where farmlands interface with wildlife habitats.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131210 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Powered Video Summarization System for Emergency and Disaster Response

(51) International classification	:H04N 7/18, G06K 9/00, G06N 3/08, G06V 20/13, G08B 25/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
The current innovation is in terms of an AI-driven system of video summarization of emergency and disaster-related response situations. The system grabs uncoded video streams of the drones, CCTV and surveillance cameras and automatically pulls out brief summaries containing vital details, such as trapped persons, waving victims, and blocked roads, fire attacks, and collapsed buildings. The invention is built upon object detection algorithms using deep learning, motion processor algorithms, and eent prioritization algorithms to shorten video duration without losing any crucial details needed to rescue people. This helps the emergency response people to respond quicker, thus saving lives and resources in case of floods, earthquakes, accidents, and other disasters.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131211 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Adaptive scheduling and control system for electric vehicles using dynamic priority-based algorithms

(51) International classification	:B60L53/00, B60L53/60, B60L53/64, G06Q50/06, G06Q10/047, H02J7/00, B60L55/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Aditi Khandal

(57) Abstract :
An adaptive scheduling and control system for electric vehicles is made available, which is designed to optimise energy consumption by means of a new dynamic algorithm. The system addresses the inefficiency of the current EV power supply by going beyond simple static timetables. It integrates multiple real-time data streams, such as the battery status of the vehicle, the intended route of the driver, live traffic updates, detailed information on road gradients and fluctuating electricity prices. A central processing unit, which may be cloud-based, runs an algorithm based on priority, continuously evaluating and ranking potential actions such as charging, charging to the grid or adjusting power consumption. These scores are updated dynamically as conditions under which the driver drives and as external factors change. The most priority action at any given moment is selected to create an optimal, real-time power schedule, which is then executed by the electric motor controller. This invention offers significant advantages, including the reduction of energy costs for users, alleviation of grid congestion through intelligent load distribution, enhancement of the vehicle's operational range, and extension of battery life by preventing overload. This comprehensive, data-driven strategy represents a novel advancement in the domain of smart energy management for vehicles.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131212 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Eco-Dyeing Technique and Fabric Treatment System Using Natural Pigments and Bio-Binding Compounds

(51) International classification	:D06P 5/00, D06P 5/20, D06P 1/34, D06P 5/02, D06P 1/673
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Ranu Burad

(57) Abstract :
The current invention proposes an innovative and environmentally friendly textile fabric dyeing and treatment method which uses natural pigments sourced in plants and binded to the fabrics using bio-based binding agents to provide a long and sustainable color on both natural and artificial fabrics. The new technology aims at the large scale reduction of water usage as opposed to traditional processes of dyeing in addition to the absence of toxic chemicals, heavy metal mordants and other substances that cause environmental pollution. It involves the use of a special pre-treatment and fixation step that improves the fixation of pigments on fibers, giving it high color permanency, laundry, and anti-fading properties. The technique achieves rich, steady, and pleasing coloration using natural dyes and biodegradable binders without affecting the environmental sustainability. Moreover, the system can support different types of textile such as cotton, silk, wool, polyester and blended fabrics such that it can be used in industries. In general, this eco-dyeing and treatment method is an environmentally and health-friendly method to deal with synthetic dyes, as well as the means of producing textiles in a socially friendly manner, therefore, allowing the principles of green chemistry and saving resources, which provides high-quality and durable colored fabrics.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131213 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Device for Real-Time Performance Analysis of Banking and Insurance Sales Professionals

(51) International classification	:G06Q 40/08, G06Q 40/00, G06Q 10/06, G06Q 30/02, G07F 19/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Dr. Devika Agarwal

(57) Abstract :
This project proposes a smartwatch-based device for performing a real-time performance assessment of banking and insurance sales professionals, correcting deficiencies in standard performance monitoring systems, which lack immediacy, coordination, and significance. This device seeks to track performance parameters, including meetings with clients, follow-ups, product-related sales performance, targets achieved and incentive payouts to allow for a complete and ongoing view of individual and team engagement. This approach also employs system modelling to enable simultaneous cloud-based analytics and mobile app development, which can be further extended for seamless data capture and analysis. Wearable devices, such as this, also include gamified leader boards to drive much needed excitement into lagging performances and provide motivation or incentive towards making a 'winner', policy event alerts to minimize missed opportunities, a virtual assistant that gives immediate access to product FAQ's and, finally, supervisor Dashboards to provide a comprehensive oversight of team engagement and performance in real-time. An initial investigation, which married requirement analysis and real world testing amongst sales professionals, concluded that there were substantial increases in task adherence, follow-up completeness, and decision-making. It was identified that the gamification provided greater motivation, that the virtual assistant substantially minimized time spent on product-related queries, and that enterprise supervisors had more visibility and control over the performance of their employees. The proposed solution was a scalable, real-time, and intelligent solution to improve accountability, productivity, and decision-making – with the opportunity in the future for AI predictive analytics and personalized coaching.

No. of Pages : 14 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131214 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Block Chain-Based Quality Assurance & Audit Trail System

(51) International classification	:H04L 9/06, H04L 9/32, G06F 16/23, G06Q 40/04, G06Q 10/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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3)Mr. Ravi Kumar Hada

(57) Abstract :
The present invention describes a blockchain-based Quality assurance and audit trail system, which is designed to ensure tamper-proof, transparent, and verifiable records in various sectors. Incorporating a distributed ledger, smart contracts, and consensus protocols, the system systematically records and verifies quality events, certifications, and compliance data. It provides real-time auditing capability, role-based access by stakeholders and automated compliance assurance, hence significantly lowering costs and considerably increasing confidence in the quality management processes.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131215 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Secured Hybrid Human-AI Router RAG System for Healthcare Escalation

(51) International classification	:G16H 40/67, G16H 10/60, G16H 40/20, G06F 21/62, G06Q 50/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)Dr. Manali Pareek

(57) Abstract :
The technology reveals a secure hybrid human-AI router RAG system specifically designed for healthcare escalation applications. The design features routing based on confidence and ethical risk scoring structure, automatic de-identification, and strict adherence to privacy guidelines (HIPAA/GDPR). The system conforms to existing standards and protocols governing secure health care/health IT practice. In this design, queries are routed between AI modules and human clinicians based upon dynamic and systematic decrees of safety and privacy. Utilizing the ongoing hybrid structure will ensure all queries are routed with secure, traceable, and privacy-preserving performance consistent with the disclosure provided in the related monitoring inventions.

No. of Pages : 14 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131216 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Innovative modular eco-lodges with solar-integrated roofs and rainwater harvesting aesthetics

(51) International classification	:E04D 13/18, E04D 13/04, E04D 13/00, E04B 7/02, E04D 13/064
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(87) International Publication No	: NA
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5)Ms. Manisha Jain

(57) Abstract :
The domain of the invention covers Innovative Modular Eco-Lodges Solar-Roofs-Rainwater-Harvesting-Aesthetics sculpted towards a prefabricated modular tourist lodging system for the sustenance and promotion of tourism. The eco-lodge features a cohesive design that incorporates solar power generation, rainwater collection and purification, and sturdy, eco-friendly wall materials. This highlights the purpose of this design to establish a model that deals with high construction costs and limited scalability of available options. These modular units can be swiftly assembled, expanded, dismantled, or relocated to any area, providing flexibility to meet varying tourist demands. Observations and literature survey are essential methodological tools to propose this design that leads to an advanced monitoring system enhances the efficiency of energy, water, and climate management, while resource-efficient practices, on-site composting, and greywater recycling systems lessen the environmental footprint. The architectural design merges functionality with decorative elements, enriching the human experience and ensuring comfort within a sustainable living space. Key findings of this innovation lowers operational costs for lodge owners, increasing profitability and attracting eco-conscious travellers, thereby fostering the growth of sustainable tourism infrastructure and concludes in form of establishing a benchmark for green hospitality solutions.

No. of Pages : 14 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131217 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Application Enhancement of Bioinformatics Tools for Safety, Quality, and Innovation in Food Processing

(51) International classification	:G06N 20/00, G16B 40/00, G16B 40/20, G01N 33/68, G06N 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Ms. Prema Kumari
(72)**Name of Inventor :**
1)Ms. Prema Kumari

(57) Abstract :
This invention presents a bioinformatics-based system for advancing food processing and preservation. Unlike conventional methods relying mainly on physical, thermal, or chemical treatments, the framework integrates genomics, proteomics, metabolomics, and data-driven analytics. This enables real-time contaminant detection, accurate assessment of nutritional outcomes, and strict adherence to safety regulations. Machine learning further enhances the system by providing predictive modeling, optimizing processes, extending shelf life, and reducing resource waste. Through this integrated approach, the invention supports the creation of functional foods and contributes to safer, more efficient, and sustainable food production.

No. of Pages : 13 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131218 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Advanced Coordination Approach for Small UAVs in Military operations for Target Search along with sensors and drone.

(51) International classification	:G05D 1/10, B64C 39/02, G05D 1/00, F41H 11/02, F41G 7/22	(71)**Name of Applicant :** **1)Poornima University** Address of Applicant :Plot No. IS-2027-2031, Ramchandrapura P.O. Vidhani, Vatika Rd, Sitapura, Jaipur, Rajasthan 303905 Jaipur Rajasthan India **2)Dr. Vaishali Sonwane** **3)Dr. Bindiya Jain** **4)Ms. Pooja Arora** **5)Ms. Yashika Saini**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	(72)**Name of Inventor :** **1)Poornima University** **2)Dr. Vaishali Sonwane** **3)Dr. Bindiya Jain** **4)Ms. Pooja Arora** **5)Ms. Yashika Saini**
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
This invention introduces a biologically-inspired coordination system specifically designed for small unmanned aerial vehicles (UAVs) engaged in military target search operations within complex, unstructured environments. The core innovation lies in the utilization of digital pheromone-based stigmergy a communication mechanism inspired by social insects such as ants and bees to enable fully decentralized, autonomous swarm behaviour without reliance on continuous centralized control. Each UAV in the swarm is equipped with imperfect, probabilistic target-detection sensors that are subject to noise and environmental interference. Upon detecting a potential target or an area of interest, a UAV releases a digital pheromone marker into a shared spatiotemporal communication field that is accessible to all swarm members. These digital pheromones act as virtual chemical signals, analogous to those used by biological swarms, to convey information about promising search zones. The digital pheromone signals are continuously aggregated, diffused, and updated among neighbouring UAVs through local communication links, creating dynamic, attractive potential fields across the operational area. These potential fields serve to collectively steer the UAV swarm's movements, guiding individual drones toward regions of highest target likelihood while encouraging efficient spatial coverage. This emergent behaviour fosters robust cooperative search patterns that adapt fluidly to environmental changes, sensor uncertainties, and variations in swarm size or composition. Key features of the system include real-time adaptability and scalability. The decentralized nature of the pheromone-based coordination allows the swarm to maintain effective operation even when individual UAVs experience sensor degradation, communication loss, or limited battery endurance. The distributed decision-making framework reduces the computational and communication load on any single unit, enabling the use of lightweight, low-cost drones with constrained on board processing power. Moreover, the biologically inspired stigmergy mechanism inherently promotes collision avoidance and prevents redundant search efforts by dynamically modulating the pheromone gradients. This ensures that UAVs distribute themselves optimally across the search space, minimizing overlap and maximizing the probability of target detection. By leveraging these principles, the invention significantly enhances mission reliability and operational robustness in demanding military scenarios characterized by uncertain terrains and adversarial conditions. The system's ability to coordinate large UAV swarms autonomously with minimal centralized intervention represents a substantial advancement in swarm robotics, offering efficient, scalable, and resilient solutions for complex target search and reconnaissance tasks.

No. of Pages : 12 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131219 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Aesthetic and Functional Design of a Convertible Scarf-Jacket for Innovative and Adaptive Fashion Solutions

(51) International classification	:A41D 23/00, A41D 15/04, A41D 15/00, A41D 3/08, A41D 1/22	(71)**Name of Applicant :** **1)Poornima University** Address of Applicant :Poornima University, Jaipur Plot No. IS-2027-2031, Ramchandrapura P.O. Vidhani, Vatika Rd, Sitapura, Jaipur, Rajasthan 303905 Jaipur Rajasthan India **2)Dr. Ranu Burad** (72)**Name of Inventor :** **1)Dr. Ranu Burad**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The convertible scarf-jacket is ingeniously crafted to offer multifunctional use, allowing the wearer to effortlessly switch between a stylish scarf and a tailored jacket. Its design is distinguished by an ornamental asymmetric front drape that cascades gracefully down one side, creating a dynamic and elegant silhouette. This drape is complemented by a diagonal alignment of buttons, which not only secure the garment but also serve as a striking visual element enhancing the sleekness of the jacket's front closure. The edges of the garment are adorned with contrasting color bands, which provide definition and accentuate the overall shape, adding to its visual appeal. Concealed arm openings are thoughtfully incorporated into the side seams, enabling seamless transition between scarf and jacket configurations without compromising the garment's aesthetic or structural integrity. Additionally, a detailed embroidered motif embellishes the rear upper portion, offering a unique and decorative feature that enhances the jacket's exclusivity and charm. Throughout its use in either mode, the garment maintains a balance of functionality and ornamental beauty, as clearly demonstrated in the accompanying drawings, which showcase the innovative design and versatility of this fashion piece.

No. of Pages : 9 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131221 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MULTI-NUTRIENT BLOCK (MAXMILK) FOR DAIRY CATTLE AND METHOD OF PREPARING THEREOF

(51) International classification	:A23K 1/175, A23K 50/10, A23K 10/33, A23K 1/18, A23K 1/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Yasir Afzal Beigh
2)Abdul Majeed Ganai
3)Haidar Ali Ahmad
4)Javid Farooq

(57) Abstract :
The present invention discloses a product (100) of multi-nutrient block for dairy cattle. Further, the product (100) is based on locally available feed ingredients including bran, molasses, oilcake, urea, mineral mixture, flour, salt, limestone, binder, di-calcium phosphate and a feed additive cocktail. The product may comprise vitamin A and vitamin D to the mixture in quantities sufficient to augment milk productivity based on local deficiencies. Further, the product (100) may comprise a fraction of apple pomace as an additional energy source. Further, the product (100) may comprise fraction of leaf meal mixture which act as a base ingredient to enhance nutritive value and palatability. Further, product (100) is shaped and cured for a period sufficient to attain hardness for controlled licking by adult. FIG. 1

No. of Pages : 24 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131227 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR STARTING AN ELECTRIC VEHICLE

(51) International classification	:B60L50/60, F02N11/08, B60R16/02, B60R16/033, H02J7/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Saravana Sudan G

(57) Abstract :
A system (100) for for starting an electric vehicle (EV) includes a hand operated Direct Current (DC) generator (104) for use to generate supplemental electric power, when a low-voltage condition of the auxiliary source (102) is detected during start of the EV. The system (100) includes a voltage booster (116) to boost voltage level of the generated electric power and a capacitor bank (106) to store the generated supplemental electric power. A controller (108) is coupled between the capacitor bank (106) and a starting circuit of the electric vehicle to supply the generated supplemental electric power to the starting circuit for jump starting of the electric vehicle. The controller (108), during low voltage condition of auxiliary source (102), instructs a Vehicle Control Unit (VCU) (114) of the EV, to prioritize jump start functionalities by disconnecting supply of power to auxiliary loads.

No. of Pages : 23 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131350 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NIOSOMAL IN-SITU GEL OCULAR SYSTEM FOR SUSTAINED GLAUCOMA THERAPY

(51) International classification	:A61P 27/06, A61K 9/00, A61F 9/007, A61K 9/06, A61K 31/5575
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Neeraj Jain

(57) Abstract :
The present invention relates to a novel niosomal in-situ gel based ocular drug delivery system for sustained treatment of glaucoma. The system comprises an antiglaucoma drug encapsulated within non-ionic surfactant vesicles, which are incorporated into a pHresponsive mucoadhesive in-situ gel. Upon ocular administration, the formulation undergoes rapid sol-to-gel transition, prolonging precorneal residence time and enabling controlled drug release. The combined effect of vesicular entrapment and in-situ gelation results in enhanced ocular bioavailability, prolonged intraocular pressure reduction, reduced dosing frequency, and improved patient compliance. The formulation is nonirritant, isotonic, stable, and suitable for chronic ocular use, offering a superior therapeutic alternative to conventional antiglaucoma eye drops. Figure. 1

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131395 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "SECURE DISTRIBUTED LEDGER ARCHITECTURE FOR TAMPER-PROOF TRANSACTION MANAGEMENT"

(51) International classification	:H04L 9/32, H04L 9/06, G06Q 20/38, G06Q 20/06, H04L 9/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Sneha

(57) Abstract :
A multi-tier distributed ledger architecture is provided for secure, tamper-proof transaction management. The system comprises multiple networked nodes (e.g. clients, validators, orderers, auditors) that collaboratively validate, sequence, and store transactions in an append-only blockchain. Each transaction is digitally signed and linked by cryptographic hashes to prior data, ensuring immutability. A hybrid consensus protocol selects block producers based on node stake and reputation, avoiding energy-intensive proof-of-work. Importantly, ledger data may be partitioned into layers (private and public channels) with periodic cross-anchoring of hashes: the hash of each subordinate block is recorded in a higher-layer block, making any alteration of prior transactions immediately detectable. By replicating the ledger across peers and employing consensus, the architecture guarantees that once transactions are committed, they cannot be tampered with undetected. This provides a provably secure, transparent audit trail for all transactions, enhancing data integrity and trust in distributed transaction systems.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131463 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI AND MACHINE LEARNING BASED LEADERSHIP OPTIMIZATION SYSTEM FOR ENHANCING WORKFORCE MOTIVATION AND MANUFACTURING EFFICIENCY

(51) International classification	:G06Q 10/06, G06N 20/00, G06Q 50/04, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Dr. Shivani Dubey
5)Dr. Gunjan A Rana
6)Dr. J. N. Giri
7)Dr. Richa Nangia
(72)**Name of Inventor :**
1)Dr. Kanika Sachdeva
2)Ms. Ruchi Dhawanind
3)Dr. Neha Gupta
4)Dr. Shivani Dubey
5)Dr. Gunjan A Rana
6)Dr. J. N. Giri
7)Dr. Richa Nangia

(57) Abstract :
The present invention relates to an Artificial Intelligence and Machine Learning based intelligent leadership optimization system for automobile manufacturing organizations. The system continuously collects psychometric leadership data, workforce behavior data, organizational culture indicators, and real-time manufacturing performance metrics. Machine learning models classify leadership styles and deep learning algorithms predict future trends in employee motivation, cultural stability, attrition risk, and productivity variation. A reinforcement learning-based optimization engine generates personalized leadership behavior recommendations to maximize workforce motivation and industrial efficiency. The system further incorporates causality detection, ethical leadership compliance monitoring, and automated leadership training recommendations. Through continuous self-learning and enterprise system integration, the invention dynamically enhances employee engagement, organizational culture, and manufacturing performance, transforming leadership into a quantifiable and optimizable industrial intelligence function.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/10/2025
(21) Application No.202511103793 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR PORTABLE ELECTRIC VEHICLE CHARGING, ENERGY MANAGEMENT, AND AUTONOMOUS MOBILITY WITH INTEGRATED ADVERTISING MODULE

(51) International classification	:B60L53/00, B60L53/30, B60L53/53, H02J7/00, H01M10/42, H02M3/155, G09F21/04, B60L53/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)CHINTAN SAREEN

(57) Abstract :
A portable electric vehicle charging system (100) is provided, comprising an enclosure (301) that houses an energy storage module with a battery assembly and battery management system, a bidirectional power electronics module featuring an inverter and DC-DC converter for pod-to-grid operations under pulse-width modulation, and a control electronics module with an IoT communication unit (206A) for real-time monitoring and diagnostics. The system further includes an integrated mobility assembly with wheels, a handle, possibly a motorized drive system with positioning sensors and an AI-based navigation processor, as well as an integrated advertisement display (101) that operates concurrently with other submodules. Additional features include swappable battery modules and an adaptive cooling module, collectively enabling modular, scalable, and autonomous operation in the field of portable electric vehicle charging and energy management.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131819 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LIPOSOMAL NANOPARTICLES FOR TARGETED DELIVERY OF ANTI-CANCER AGENTS AND METHOD THEREOF

(51) International classification	:A61K9/127, A61P35/00, B82Y5/00, B82Y30/00, A61K31/704, A61K31/337, A61K47/10, A61K47/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Bhakti Pandey
3)Shweta Sharma
4)Ravi Rawat

(57) Abstract :
The present disclosure provides liposomal nanoparticles for targeted delivery of anti-cancer agents. Each nanoparticle includes a liposomal core encapsulating an anti-cancer agent, which may be doxorubicin or paclitaxel, a targeting moiety attached to the surface of the liposomal core that binds specifically to tumor cells, and a biocompatible polymer such as polyethylene glycol to reduce recognition by the immune system. The liposomal core contains phospholipids selected from phosphatidylcholine, phosphatidylethanolamin, and phosphatidylserine. The nanoparticles are administered to a patient in need of cancer treatment, where they bind to tumor cells and release the anti-cancer agent at the tumor site in a controlled manner. This targeted delivery reduces systemic side effects and enhances therapeutic efficacy. The method is applicable to various cancers, including breast, lung, liver, and colon cancers, providing a precise, efficient, and biocompatible treatment strategy.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131820 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CAKE-WRITING PEN FOR PRECISION EDIBLE DECORATION

(51) International classification	:A21C15/00, A23G3/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)Nakul Gupta
2)Pankaj Jha
3)Shweta Sharma

(57) Abstract :
A cake-writing pen (100) for edible decoration of confectionery surfaces is disclosed. The cake-writing pen includes a refillable reservoir body (12) configured to store edible marking materials such as edible ink, icing gel, chocolate, or similar food-grade substances. A dispensing tip assembly (18) enables controlled discharge of the edible marking material for writing and decorative pattern formation. The cake-writing pen further includes a flow-actuation member (14) configured to apply regulated dispensing pressure and an elongated housing portion (22) adapted for pen-like handling. Interchangeable tip elements (26) support varied decorative styles, while a non-stick internal surface improves hygiene and reuse. An anti-drip feature restricts unintended discharge, and a protective cap maintains cleanliness during non-use. The cake-writing pen supports precision edible writing on cakes, pastries, and related edible products while enabling consistent material flow across surfaces having different textures.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131821 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CAKE WRITING DEVICE WITH PRECISION NOZZLE AND CONTROLLED ICING DISPENSING SYSTEM

(51) International classification	:A21C 15/00, A21C 15/02, A21C 15/04, B05B 11/00, A21D 13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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2)Pankaj Jha
3)Shweta Sharma

(57) Abstract :
A cake writing device (100) is disclosed for precise decoration of baked goods. The device (100) includes a refillable icing reservoir (102) for holding a supply of icing, a nozzle (104) configured to deliver icing in a controlled flow, a dispensing mechanism (106) for expelling icing through the nozzle (104), and a housing (108) having a pen-like structure for precise handling. The dispensing mechanism (106) may be a manual plunger, a spring-loaded piston, or a micro-pump system and may include an anti-clog valve system. The nozzle (104) includes a fine-tip aperture and is replaceable, allowing selection of various aperture sizes for different icing thicknesses. The icing reservoir (102) is cartridge-based for quick replacement or refilling and is surrounded by a temperature-control sleeve to maintain icing consistency. The dispensing mechanism (106) may be powered by a rechargeable battery and motorized flow assistance system to regulate icing flow.

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131857 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM FOR AN AUTOMATED CHESSBOARD INTEGRATED WITH AN ONLINE SIMULATION PLATFORM

(51) International classification	:A63F 3/00, A63F 3/02, A63F 3/04, G06F 17/50, G06F 11/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Om Dubey
4)Dr. Aprna Tripathi
5)Dr. Shahbaz Ahmed Siddiqui

(57) Abstract :
The present invention discloses an automated chessboard with an integrated online simulator, providing a hybrid hardware–software system for synchronized chess gameplay and rule enforcement. The system comprises a sensor-based physical chessboard configured to detect the placement and movement of chess pieces and a processing unit for generating real-time board state data. An online simulator implementing a complete chess rule engine is developed to simulate, test, and validate all chess rules, including legal move validation, castling, pawn promotion, check, checkmate, stalemate, scoring, and time control, prior to physical hardware implementation. A unified logic framework ensures consistency between the simulator and the physical chessboard, such that the same validated logic governs both environments. The invention reduces hardware development iterations, minimizes logical errors, and lowers overall cost by validating gameplay logic in a software environment before fabrication. The system is modular and extensible, enabling future integration with artificial intelligence, online multiplayer platforms, and educational applications.

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131860 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Automatic Water Quality Monitoring and Dosing System

(51) International classification	:C02F 1/00, G05D 9/12, G01N 33/18, C02F 1/68, G01N 1/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Aditya Tripathi
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(57) Abstract :
Automatic Water Quality Monitoring and Dosing System is a simple and economical setup that is planned to ensure water safety and purity in storage tanks. It regulates water level and clarity by making use of sensors and then uses a pump to feed the right amount of cleaning chemicals when water is considered polluted. An extra drainage pump can be utilized to dispose of severely polluted water. Safety devices, such as float switches, fuses, and waterproof cover, ensure the system's protection. The ESP32 chip regulates all activities and sends real-time information to a web-based dashboard through the use of the internet. Users are given the privilege of accessing readings, notifications, and history. The invention reduces manual work, saves chemicals, and ensures water is safe for domestic, farming, and industrial use.

No. of Pages : 9 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202511131496 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CHEMICAL-FREE SUSTAINABLE LOW-WATER PROCESS FOR MANUFACTURING BIODEGRADABLE CONTAINERS FOR PACKAGING APPLICATIONS

(51) International classification	:C08L 97/02, B65D 65/46, C08L 3/02, B29C 51/00, C08J 5/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)PRANAY KUMAR
2)SAPNA BALHARA

(57) Abstract :
The present invention discloses a chemical-free, low-water process for producing biodegradable containers of food and other regulated grades from agro-residue. Agro-residue (101) comprising lignocellulosic agricultural waste is subjected to chemical-free mechanical refining (102). The refined fibers undergo water-conservative bioprocessing (103) using not more than 30% water compared to conventional molded-fiber processes (104). The processed fibers are formed into sheets or three-dimensional container molds (105), followed by the addition of a food-grade biopolymer/natural polymer in an amount of 10-30 wt% (106). The molded articles are heat pressed at 120-160°C (107) to achieve structural stability and moisture resistance, and subsequently sterilized using physical sterilization techniques (108) to meet food-contact and regulated-grade requirements. At least 90% of solid process residue is internally recirculated (109). The process yields non-edible, biodegradable containers suitable for food, pharmaceutical, healthcare, and related regulated packaging applications (110). (FIG.1 is the abstract Figure)

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202511131505 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : APPARATUS FOR CONTEXT-AWARE MULTIMODAL WEARABLE HCI WITH PRIVACY-PRESERVED OUTPUT AND SAFETY FALLBACK PROTOCOLS

(51) International classification	:G06F 3/01, G06N 3/08, G06N 3/04, G06F 3/16, G06K 9/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Harshleen Kaur
3)Milton Kumar
4)Urvashi Sharma
5)Radhe Shankar

(57) Abstract :
The present invention relates to wearable human–computer interaction systems that integrate multiple sensing modalities captured by a multimodal sensing layer comprising inertial, acoustic, biosignal, environmental, and optional neural sensors. A signal preprocessing module refines the raw data into a context vector, which is then analyzed by a context and user-state interpretation module to generate high-level descriptors. A modality decision engine selects an optimal input modality based on sensor integrity and historical data, while a privacy-governed output controller ensures that output channels, including directional audio and haptic signals, are chosen in accordance with environmental conditions. A fallback and safety module and personalization and adaptation module safeguard interaction efficacy and privacy, delivering adaptive, real-time responses via an output actuation layer.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131716 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EVAPORATIVE AIR COOLER INCORPORATING A DUAL FAN BLADE CONFIGURATION FOR IMPROVED AIR DELIVERY

(51) International classification	:F04D 19/00, F04D 29/28, F04D 25/08, F04D 29/32, F04D17/00, F04D 25/10, F04D 29/66
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)CHIRAG SHARMA

(57) Abstract :
The present disclosure provides a fan assembly comprising a motor housing enclosing a motor, a drive shaft rotatably coupled with the motor and extending outwardly from the motor housing, a first impeller mounted on the drive shaft, the first impeller comprising a plurality of first blades radially extending about the drive shaft, a second impeller mounted on the drive shaft adjacent to the first impeller, the second impeller comprising a plurality of second blades radially extending about the drive shaft, and a fastening element engaging the drive shaft to secure the first impeller and the second impeller in fixed axial positions relative to the motor housing. Fig. 1

No. of Pages : 26 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132216 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOL-GEL METHOD FOR DIRECT REVIVAL OF LITHIUM IRON PHOSPHATE MOLECULES FOR FAST CHARGE/DISCHARGE APPLICATIONS

(51) International classification	:H01M 4/00, H01M 4/62, H01M 4/02, H01M 4/58, H01M 10/00, B82Y 30/00, H01M 10/54, H01M 4/133
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)DESAI, Vedant
3)ANSARI, Shahbaz Akhtar
4)VERMA, Rajat

(57) Abstract :
The present disclosure provides a Sol-gel method for regenerating spent $LiFePO_4$ (LFP) cathode material from lithium-ion batteries. The process involves binder removal, structural restoration using lithium-based reducing agents, and surface modification with conductive materials. The method incorporates two-dimensional graphene-like materials to enhance electrical, ionic conductivities and morphology. The process is sustainable, operating in a closed-loop Zero Liquid Discharge (ZLD) system, eliminating liquid waste. Surface modification, achieved by coating the regenerated LFP with conductive carbon materials (e.g., Super P, RGO, citric acid) and annealing in inert atmospheres (e.g., N_2, Ar) at 250–650°C, enhances chemical stability and prevents lithium loss during battery cycling. This approach improves the electrochemical performance, durability of LFP cathodes and also aligns with environmentally sustainable practices, promoting efficient resource utilization and reduced production costs ensuring recycling of LFP Cathode by direct process of reviving and enhancing the spent LFP Cathode.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202511132240 A
(19) INDIA
(22) Date of filing of Application :26/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR DISTILLATION-BASED WATER PURIFICATION

(51) International classification	:C02F 1/04, B01D 3/00, B01D 3/42, B01D 1/00, B01D 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Sarfaraz Alam
3)Shweta Sharma
4)Ravi Rawat

(57) Abstract :
A portable distillation system (100) and a method (200) for producing distilled water are disclosed. The system (100) includes a housing (102) enclosing a heating chamber (104) configured to receive untreated water. A heating element (106) positioned within the heating chamber (104) is powered through a power source and is monitored by at least one temperature sensor (108). A control circuit (110) regulates electrical power supplied to the heating element (106) to maintain controlled operating conditions. Water vapor generated in the heating chamber (104) is directed through a vapor conduit (112) having a one-way vapor-flow mechanism (114) that restricts reverse flow. The vapor is condensed within a condenser assembly (116) including a thermally conductive coiled tube to form liquid distilled water. The condensed water is collected in a distilled-water collection container (118) isolated from the heating chamber (104).

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132241 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BIOLOGICALLY CONSTRAINED MULTI-OMICS REPURPOSING PLATFORM AND CORRESPONDING COMPUTATIONAL METHOD

(51) International classification	:G16B 5/00, G16B 40/20, G16B 40/00, G16B 20/20, G16H 50/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Shweta Sharma
4)Sudhir Arora

(57) Abstract :
A repurposing platform (100) is disclosed comprising a data harmonizer (102), a multi-omics graph assembler (104), a mechanistic constraint module (106), and a scoring and interpretation engine (108). The system (100) generates indication-specific biological graphs, embeds mechanistic restrictions including pathway direction, disease-aligned action, toxicity screening, and biomarker relevance, and produces a therapeutic suitability score for approved drugs. A method (200) includes constructing the graph structure (202), training a constraint-aware graph representation model (204), and producing prioritized drug–indication predictions with explanatory pathways and biomarker suggestions (206). Optional structural-biology triage enhances confidence in selected candidates. The invention improves interpretability, mechanistic grounding, and translational reliability of repurposing recommendations.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025

(21) Application No.202511131728 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Flora Dew Mist & Roll-On – A 2-in-1 skincare kit based on Multani Mitti

(51) International classification	:A61K8/02, A61K8/18, A61Q19/00, A61Q17/00, A61K8/97, A61K8/92, A61K47/00, A61K9/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Samradhi Shukla
7)Saloni Jaiswal
8)Ritik Kumar
9)Harit Kumar

(57) Abstract :
Flora Dew is a 2-in-1 herbal skincare innovation that unites a hydrating facial mist and a targeted roll-on applicator into one portable daily-care system. Unlike conventional skincare products that address hydration, detoxification, or antimicrobial action in isolation, Flora Dew takes a multi-functional and holistic approach.The Face Mist employs a suspension of Multani Mitti in an antioxidant-rich base of Black Rice Water with Lotus Stem Extract, Jasmine Oil, Tea Tree Oil, and Moringa Oil. The Roll-On formulation combines Moringa Oil, Prickly Pear Oil, Green Tea Water, and Lotus Stem Hydrosol, stabilized with natural emulsifiers, to deliver localized detoxification, antioxidant defense, barrier repair, and radiance enhancement.The system uses plant-based actives, mineral clays, and mild stabilizers to ensure compatibility across all skin types. Packaged in travel-friendly formats,a fine mist atomizer, and a glass roll-on,it is eco-conscious, reusable, and free from parabens, sulfates, and harsh chemicals. By merging Ayurvedic heritage with modern cosmetic delivery systems, Flora Dew presents a first-of-its-kind clay-based water formulation that provides detoxification, hydration, antimicrobial defense, and mood-enhancing benefits in a single kit. This invention not only simplifies skincare but also integrates emotional wellness and sustainability, making it a pioneering advancement in holistic beauty care.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131730 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART MULTI-MODE JET WASHER WITH MACHINE-LEARNING CLEANING OPTIMIZATION USING SOLAR-HYBRID BATTERY SYSTEM

(51) International classification	:B08B3/02, B08B13/00, B25J5/00, B25J11/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Garima Goswami

(57) Abstract :
The present invention relates to an intelligent, battery-operated high-pressure jet washing system configured for railway, industrial, and large-scale cleaning applications. The system integrates an AI-adaptive cleaning module that utilizes sensor inputs—including vision, infrared, pressure, and flow sensors—to classify contamination levels and automatically adjust water pressure, flow rate, detergent dosage, and spray angle in real time. A solar-hybrid energy architecture comprising flexible photovoltaic panels, a maximum power point tracking controller, and a smart battery management system enables renewable charging and extended off-grid operation. A regenerative energy recovery unit converts kinetic and hydraulic energy generated during hose retraction or pressure release into electrical power for additional battery charging. The system is optionally mountable on a modular robotic cleaning platform equipped with autonomous navigation features such as LiDAR, ultrasonic sensors, and path-planning algorithms for automated or semi-automated cleaning of railway tracks, platforms, and coach exteriors. The invention provides a sustainable, smart, and autonomous high-pressure cleaning solution that significantly enhances cleaning efficiency, reduces resource consumption, and supports remote and off-grid operation.

No. of Pages : 33 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131737 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Powering the Path Forward: A Sustainable Approach to Energy Generation using Footsteps

(51) International classification	:H02N2/18, H10N30/30, H10N30/85
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Pallavi Verma
3)Vinayak Uniyal
4)Sakshi Pandey
5)Priyanka

(57) Abstract :
Piezoelectric power generation has emerged as a promising renewable energy solution leveraging mechanical vibrations to produce electricity. This project aims to advance the field through the integration of novel components and technologies to enhance efficiency, versatility, and applicability across various environments. The project focuses on developing a portable and adaptable piezoelectric energy harvesting system capable of generating electricity from ambient mechanical movements, such as footsteps or vibrations. Key innovations include the use of flexible piezoelectric polymers (PVDF) and graphene oxide coatings to optimize energy conversion efficiency and durability. Integration with triboelectric Nano generators (TENGs) creates a hybrid system that maximizes energy harvesting capabilities. Technological advancements also encompass the incorporation of self-healing polymers for enhanced system longevity and reliability. Adaptive rectifiers and energy harvesting integrated circuits (EHICs) manage and optimize energy flow, while AI and IoT modules enable smart monitoring and control for real-time performance assessment and operational adjustments. Applications span from wearable energy solutions to smart infrastructure deployments in public spaces, offering scalable and sustainable alternatives to traditional power sources. Financial feasibility and market competitiveness are supported by detailed cost-benefit analyses, projecting potential savings in energy costs and environmental impact reductions. This project represents a significant step towards commercializing innovative piezoelectric technologies, addressing global energy challenges while paving the way for future advancements in renewable energy solutions.

No. of Pages : 7 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132245 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR STOCK PRICE FORECASTING USING HYBRID DETERMINISTIC-STOCHASTIC MODELING AND BAYESIAN UNCERTAINTY ESTIMATION

(51) International classification	:G06Q 40/04, G06Q 40/00, G06Q 40/06, G06N 7/00, G06Q 10/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Simar Singh Rayat
3)Dr. Chandradeep Bhatt
4)Dr. Anupam Singh

(57) Abstract :
This invention relates to financial forecasting and discloses a system comprising an input data collection and preprocessing module (10) for historical stock price data, a deterministic modeling module (20) employing Holt-Winters exponential smoothing to decompose data, and a residual extraction module (30) to compute deviations. A stochastic modeling module (40) uses Geometric Brownian Motion to estimate drift and volatility from the residuals, while a Bayesian uncertainty estimation module (50) performs MCMC sampling to generate simulated future price paths. Integration of these forecasts by a forecast integration module (60) yields a final hybrid forecast with both point values and prediction intervals, thereby robustly addressing systematic trends and stochastic variations in stock price forecasting.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132246 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR ADAPTIVE MULTI-AGENT TRAFFIC SIGNAL CONTROL UTILIZING GRAPH NEURAL NETWORKS, REAL-TIME COMPUTER VISION, AND REINFORCEMENT LEARNING

(51) International classification	:G06N 3/08, G06N 3/04, G08G 1/07, G06K 9/62, G08G 1/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Ankit Negi
3)Sujal Thapa
4)Dr. Chandradeep Bhatt
5)Dr. Anupam Singh

(57) Abstract :
The invention relates to intelligent traffic management and comprises a perception module with IoT-enabled cameras and edge processing units executing deep convolutional neural networks for object detection and tracking, thereby extracting traffic state variables. A graph modelling module converts a road network into a directed graph utilizing a graph constructor, embedding layers, and a Graph Attention Network (GAT) with multi-head attention, dynamic coefficient computation using learnable transformations, LeakyReLU activation, and softmax normalization. A decision-making module, featuring deep reinforcement learning agents based on Multi-Agent Proximal Policy Optimization (MAPPO) and incorporating an action masking mechanism, selects optimal traffic signal phases at each intersection. The system further integrates simulation, validation, and deployment infrastructures for comprehensive real-time traffic control.

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132247 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR GENOTYPE-BASED RICE PHENOTYPE PREDICTION USING A UNIFIED DEEP LEARNING ARCHITECTURE

(51) International classification	:G06N 3/04, G06N 3/08, G16B 30/00, G16B 40/00, G16B 30/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Anoop Bharti
3)Rahul Kandwal
4)Dr. Chandradeep Bhatt
5)Dr. Anupam Singh

(57) Abstract :
The invention relates to a system that predicts rice plant phenotypes based on genomic data using an integrated deep learning framework. It comprises a data ingestion and preparation module (10) that acquires and cleans raw DNA sequences, followed by a DNA encoding module (20) that converts the sequences via one-hot encoding. The encoded data is then processed through a convolutional neural network (CNN) module (30) with one-dimensional convolution layers (32), batch normalization layers (34), and max pooling layers (36) for local motif extraction. Sequential dependencies are modeled using a bidirectional LSTM module (40), and global genomic interactions are captured by a transformer module (50) with multi-head self-attention. Finally, a classification module (60) employs a fully connected layer (62) and SoftMax activation (64) to map features to phenotype predictions, with optional data augmentation enhancing data reliability.

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132513 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Ag8SnS6– POLYANILINE HYBRID COMPOSITE FOR PHOTOCATALYTIC TREATMENT OF TEXTILE DYE EFFLUENTS

(51) International classification	:B01J35/45, B01J35/39, C02F1/30, C02F1/72, B01J27/04, B01J31/02, B01J31/06, C08G73/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Akshara Bassi

(57) Abstract :
The present invention relates to a novel Ag_8SnS_6–Polyaniline (PANI) hybrid photocatalytic composite designed for efficient degradation of textile dye pollutants under visible-light irradiation. The composite integrates a narrow-band-gap semiconductor, Ag_8SnS_6, with the conductive polymer PANI, forming a synergistic heterojunction that enhances charge separation, suppresses electron–hole recombination, and significantly improves photocatalytic efficiency compared to the individual materials. The hybrid material is synthesized using an environmentally friendly process involving solvothermal preparation of Ag_8SnS_6, controlled oxidative polymerization of PANI, and ultrasonic-assisted integration without toxic solvents. The composite demonstrates rapid dye degradation, high stability, and reusability over multiple treatment cycles. This invention provides a cost-effective, sustainable, and scalable photocatalyst for industrial wastewater treatment, particularly targeting textile dye effluents.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132514 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PIEZOELECTRIC POWER-GENERATING SHOES WITH INTEGRATED USB CHARGING PORT

(51) International classification	:A43B3/42, A43B3/40, H02J7/00, H02N2/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Vinay Shah
5)Dr. Inderpreet Singh
6)Meenakshi

(57) Abstract :
The present invention discloses an autonomous ocean-cleaning drone system capable of identifying, collecting, and biologically degrading marine plastic waste directly at sea. The system integrates an AI-based navigation and debris detection module, a robotic collection and pre-treatment mechanism for shredding plastic, and sealed mycelium-based digestion pods that enzymatically break down polymers into harmless organic compounds. An optional bioenergy recovery unit converts the degradation byproducts into usable fuel to extend operational life. Multiple drones operate collaboratively via swarm intelligence for large-scale deployment. Unlike traditional systems that only collect and transport waste to land, this invention performs complete on-site degradation, thereby minimizing secondary pollution and reducing reliance on shore-based waste facilities. The invention represents a self-sustaining, scalable, and eco-friendly solution combining robotics, biotechnology, and renewable energy to address the global marine plastic pollution crisis.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132515 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-BASED SHEAR WAVE ELASTICITY PROFILING FOR NON-INVASIVE BILIRUBIN MEASUREMENT AND JAUNDICE DETECTION

(51) International classification	:A61B 5/00, A61B 5/1455, A61B 5/145, G16H 50/20, A61B 5/05
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Ujjwal Mishra
2)Raj Singh
3)Purvansh Kaistha
4)Mr. Aaskaran Bishnoi

(57) Abstract :
The present invention relates to a non-invasive system and method for quantitative bilirubin estimation and jaundice detection using Shear Wave Elasticity Profiling (SWEP) integrated with artificial intelligence-based distortion analysis. The system generates controlled shear waves within superficial tissues such as skin or sclera and captures their spatio-temporal propagation using a high-frame-rate detection unit. A signal processing engine extracts bilirubin-specific mechanical biomarkers, including shear wave velocity, attenuation, dispersion, phase characteristics, and harmonic distortion. These features are normalized and processed by an AI model trained exclusively on paired shear-wave and serum bilirubin datasets to produce a real-time bilirubin concentration and jaundice severity classification. Unlike optical or invasive methods, the system operates independently of skin pigmentation, ambient lighting, or blood sampling. The invention provides a portable, rapid, and clinically reliable diagnostic platform suitable for neonatal screening, rural healthcare, and point-of-care monitoring of bilirubin dynamics.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131865 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN PREDICTIVE FRAMEWORK FOR COVID-19 VACCINE RESPONSE AND POST-VACCINATION HEALTH RISK ASSESSMENT

(51) International classification	:G16H50/20, G06N3/08, G16H20/10, G16H50/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention pertains a prediction system powered by AI for evaluating post-vaccination health risks and studying individual COVID-19 vaccine response. Demographic characteristics, clinical history, comorbidities, genetic indicators, immunization type, dosage intervals, and real-time physiological signals are among the varied data that the framework incorporates. To forecast the strength of the immune response, the persistence of antibodies, and the likelihood of unfavourable outcomes over both short-term and long-term horizons, sophisticated machine learning and deep learning models are trained. Using post-vaccination monitoring data from wearable technology and electronic health records, the system uses continuous learning techniques to update risk models. For doctors and public health authorities, a decision-support layer creates customized risk assessments, early warning alarms, and adaptive follow-up suggestions. The suggested framework ensures scalable deployment, interoperability, transparency, robustness, and ethical compliance across diverse populations worldwide while improving patient safety, optimizing vaccination strategies, and supporting evidence-based policy decisions during pandemic and post-pandemic healthcare management through data-driven stratification of vaccine outcomes. FIG.1

No. of Pages : 12 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131884 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED WATER MANAGEMENT ECOSYSTEM WITH INTEGRATED LEAK ANALYTICS AND SUPPLY COORDINATION

(51) International classification	:G06Q 50/06, F04B 49/06, G05B 19/042, G05B 19/418, H04W 4/38
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Khushi Goswami

(57) Abstract :
The present invention provides an IoT-integrated Smart Water Monitoring and Automated Pump Control System designed to optimize water management in domestic, commercial, and industrial settings. The system incorporates water-level sensors, flow sensors, and a microcontroller to continuously monitor tank levels, detect leakage or abnormal flow, and regulate pump operation automatically. A municipal supply-integration module synchronizes pump activity with external water-supply schedules, ensuring efficient tank filling and preventing missed supply periods. The system communicates with a cloud platform through Wi-Fi, GSM, or LoRa modules for real-time data logging, predictive analytics, and remote access via a mobile application. Users receive instant notifications for overflow, shortage, leakage, or pump status changes. Through automated decision-making, leakage detection, analytics, and failsafe mechanisms, the invention ensures reduced water wastage, improved pump safety, and data-driven water-resource optimization.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131885 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE AI SYSTEM FOR REAL-TIME EPILEPTIC SEIZURE DETECTION USING MULTI-MODAL SENSOR FUSION

(51) International classification	:A61B 5/00, A61N 1/365, A61B 5/374, A61B 5/369, A61B 5/0476
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Armaan Preet Singh

(57) Abstract :
The present invention provides a wearable, real-time seizure detection and prediction system that integrates multi-modal physiological sensing with edge-based artificial intelligence. The device combines electrodermal activity, accelerometry, heart rate variability, electromyography, and optional EEG sensors to accurately identify tonic–clonic, focal, and absence seizures while minimizing false positives using adaptive thresholds and motion-artifact rejection. A lightweight CNN-LSTM model enables sub-second, on-device analysis without cloud dependency, and federated learning allows personalized pattern recognition while preserving patient privacy. The system further incorporates pre-seizure prediction through autonomic biomarkers and delivers closed-loop intervention via haptic feedback or transcutaneous vagus nerve stimulation to potentially disrupt early seizure activity. GPS-enabled emergency alerts and a HIPAA-compliant cloud dashboard support caregiver notification and long-term clinical monitoring. This invention advances epilepsy management by combining detection, prediction, and intervention in a single, power-efficient wearable platform.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131738 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SATHI – A HEALTHCARE COMPANION: – AN AI-ENABLED EMERGENCY HEALTHCARE SUPPORT AND MEDICAL ASSISTANCE SYSTEM

(51) International classification	:G16H 40/67, G16H 10/60, G06Q 50/22, G16H 40/20, H04W 4/029
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Abhishek Kannaujiya
4)Avnish

(57) Abstract :
Sathi is a mobile-based healthcare platform designed to provide real-time emergency care, continuous patient monitoring, and AI-assisted analysis of medical reports. The system connects patients, healthcare professionals, hospitals, and family members, particularly during critical health episodes, by automating SOS alerts along with live geolocation sharing. Additionally, it offers secure cloud storage for medical records, facilitating quick and reliable access. Sathi is tailored for individuals with chronic illnesses, elderly persons living alone, people with disabilities, and students who may be geographically distant from their families, ensuring they have rapid access to care when needed. This solution significantly reduces the response time in emergencies, offering quicker medical intervention and better outcomes. Sathi incorporates Optical Character Recognition (OCR) and AI-driven analytics to process medical records, summarizing key reports and helping healthcare professionals identify health risks promptly. By merging emergency alerts, advanced AI analysis, and digital health record management into one integrated platform, Sathi enhances healthcare accessibility, minimizes delays in treatment, and contributes to preventive care efforts, especially for high-risk individuals. The platform's holistic approach not only supports immediate care but also ensures long-term health management, making it a vital tool in modern healthcare.
Sathi is a mobile-based healthcare platform designed to provide real-time emergency care, continuous patient monitoring, and AI-assisted analysis of medical reports. The system connects patients, healthcare professionals, hospitals, and family members, particularly during critical health episodes, by automating SOS alerts along with live geolocation sharing. Additionally, it offers secure cloud storage for medical records, facilitating quick and reliable access. Sathi is tailored for individuals with chronic illnesses, elderly persons living alone, people with disabilities, and students who may be geographically distant from their families, ensuring they have rapid access to care when needed. This solution significantly reduces the response time in emergencies, offering quicker medical intervention and better outcomes. Sathi incorporates Optical Character Recognition (OCR) and AI-driven analytics to process medical records, summarizing key reports and helping healthcare professionals identify health risks promptly. By merging emergency alerts, advanced AI analysis, and digital health record management into one integrated platform, Sathi enhances healthcare accessibility, minimizes delays in treatment, and contributes to preventive care efforts, especially for high-risk individuals. The platform's holistic approach not only supports immediate care but also ensures long-term health management, making it a vital tool in modern healthcare.
No. of Pages : 15 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025

(21) Application No.202511131739 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An Artificial Intelligence–Based System and Method for Real-Time Adaptive Interviewing with Automated Response Analysis and Cheating Detection

(51) International classification	:G06Q 10/10, G06N 20/00, G06Q 10/06, G10L 15/26, G10L 15/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Priyanshu Chaturvedi

(57) Abstract :
The proposed AI based Interview Assistant is a next generation Artificial intelligence-based assessment system that transforms the entire process to a digital interview system, incorporating real time response evaluation, generating intelligent questions with integrity monitoring. This design combines three vital components of automating interviews as follows: (1) Based on Contextual understanding with its AI- driven capabilities, it dynamically generates interview questions (2) With API- based audio Transcriptions it automatically evaluates the performance (3) It is followed by advanced anti-cheating monitoring combining video monitoring with behavioural analysis. The proposed system formulates the process of automated interviews with Gemini based question analytics, it ensures the continuous evaluation of questions based on multiple factors like responses, clarity of communication, classifications of skills and topic depth. An equipped machine learning feedback engine analyses techno- behavioural answers by generating real time weighted scoring incorporating vital performance stats. The second proposed module evaluates high accuracy transcriptions of audio cum spoken responses combined up with neural audio processing and it converts back it to structured text for further analysis. The system subsequently implements method for sentiment recognition followed by keyword-based correction mapping with clarity metrics for speech and topic relevancy scorings that ensure objective evaluating without any manual intervention The third subsystem ensures interview integrity through front-camera based proctoring. It detects identity mismatch, external object usage, suspicious gaze movement, multiple-person presence, and non-verbal assistance patterns. Video recording and monitoring events are logged and can be reviewed by interview administrators for compliance. The third module subsystem guarantees integrity of the digital interview process with front camera based proctorial monitoring. It aims to detect mismatches in identity, usages of external object usages followed by suspicious gazing movements, presence of multiple persons and varied non -verbal assistance patterns. The complete set up was fabricated with a well secured MERN supporting architecture module with AI services. The designed system will support a list of tasks ranging from candidate resume uploads, generating automated evaluation reports followed by performance dashboards and uninterrupted Interviewer oversights. This will significantly improve the recruitment process efficiency, eliminate interviewer biasing, and reduce operational costs by enhancing remote hiring accessibilities for large scale hiring.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132248 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR TUBERCULOSIS DIAGNOSIS IN LOW-RESOURCE HEALTHCARE SETTINGS USING ADAPTIVE CONVOLUTIONAL NEURAL NETWORKS WITH DOMAIN ADAPTATION TECHNIQUES

(51) International classification	:G06N 3/04, G16H 50/20, G06N 3/08, G06T 5/00, G06K 9/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Dr. Chandradeep Bhatt
5)Dr. Anupam Singh

(57) Abstract :
The invention discloses a diagnostic system for tuberculosis in resource-constrained healthcare environments by integrating adaptive convolutional neural networks with domain adaptation techniques. The system comprises a data collection module (10) for acquiring high-quality chest X-ray images and clinical notes, an image degradation module (20) to simulate lower image quality through noise, motion blur, resolution reduction, and uneven brightness, and a clinical notes translation module (30) that uses natural language processing to localize foreign clinical information. A CNN-based model training module (40) implements a dual-stage training process with initial training on high-quality images followed by fine-tuning using domain-adapted data. The evaluation and prediction module (50) assesses model performance via multiple metrics, while the deployment integration module (60) ensures seamless distribution of diagnostic outputs via mobile or cloud-based platforms.

No. of Pages : 14 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132249 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR BLOCKCHAIN-INTEGRATED AI-BASED ENERGY OPTIMIZATION AND OCCUPANCY DETECTION IN SMART CLASSROOMS USING CCTV AND IOT

(51) International classification	:G06N 3/08, H04N 7/18, G06N 3/04, G05B 15/02, H04L 9/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Dr. Anupam Singh

(57) Abstract :
A system and method for optimizing energy consumption and detecting occupancy in smart classrooms is disclosed, wherein an environmental sensing module (comprising IoT sensors such as a DHT22 sensor, LDR, and BMP280/BME280 sensor) is coupled to an ESP32-S3 microcontroller for local processing, while an AI-based occupancy detection module utilizes CCTV cameras and an NVIDIA Jetson Nano running a YOLOv5 deep learning model for real-time occupant counting. Processed sensor and occupancy data are transmitted via a data transmission network module (using protocols such as MQTT and Kafka) to a blockchain integration module wherein blockchain nodes record cryptographic hashes with smart contracts, and energy optimization is achieved by a control unit adjusting fans, air conditioners, and lights.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132250 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR PROACTIVE TOURIST SAFETY MONITORING INCORPORATING ARTIFICIAL INTELLIGENCE, DYNAMIC GEOFENCING AND BLOCKCHAIN TECHNOLOGY

(51) International classification	:G06Q 50/14, G06Q 50/26, G06N 20/00, G06Q 50/10, H04L 9/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to a system for proactive tourist safety monitoring that integrates multi-source data acquisition from a tourist mobile application and external sources with an AI risk assessment module (20) incorporating a Spatio-Temporal Weighted Random Forest model to compute dynamic Safety Scores. A dynamic geofencing module (30) establishes and adjusts virtual boundaries in real time based on these scores, while a blockchain logging module (40) secures critical event data via smart contracts on an immutable ledger. An administrative dashboard (50) provides real-time geospatial visualizations and event logs, ensuring prompt alerts when geofence breaches occur. The system further enhances data security and model accuracy through encrypted communication and continuous updates, thereby offering a comprehensive solution for enhancing tourist safety.

No. of Pages : 22 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132455 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PULMONARY DRUG DELIVERY DEVICE

(51) International classification	:A61M11/00, A61M15/00, A61M16/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
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Filing Date	:NA

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4)Ravi Rawat

(57) Abstract :
A pulmonary drug delivery device (100) is disclosed for controlled aerosol delivery based on user breathing. The device (100) includes a housing (102) defining an airflow path (103) between an air inlet (104) and a patient interface (106). A drug reservoir (108) supplies a liquid drug formulation to a micro-nebulizing chamber (110) containing an ultrasonic mesh atomizer (112) with micro-apertures (114) that generate aerosol. A breath sensor (116) positioned along the airflow path detects airflow rate, airflow direction, and inhaled volume. A controllable microvalve (118) regulates aerosol passage toward the patient interface. A control unit (120) having a processor (122) and memory (124) receives breath parameter data and evaluates predefined inhalation conditions. During inhalation, the control unit actuates the ultrasonic mesh atomizer and opens the microvalve, and upon inhalation completion deactivates the atomizer and closes the microvalve.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132468 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Single-Stage Bio-Catalytic Reactor System and Method for Simultaneous Nitrogen Removal and Additive-Free Phosphorus Recovery

(51) International classification	:C02F 3/30, C02F 3/00, C02F 3/02, C02F 3/12, C02F 3/34, C02F 3/28, C02F 101/16, C02F 101/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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5)Dr. Shaikh Zia Ahmmad
6)Dr. M. Sudhakar Reddy
7)Dr. Dwarikanath Ratha

(57) Abstract :
The present disclosure proposes a sequential bio-catalytic reactor system (100) and methods for simultaneous nitrogen and phosphorus removal using a defined microbial consortium. A phosphorus recovery is achieved through a metabolically induced in-situ release mechanism that produces a usable phosphorus-rich stream without requiring chemical additives, fermentation processes, or energy-intensive treatments. The sequential bio-catalytic reactor system (100) comprises a bioreactor (102), an influent supply unit (104), a gas supply unit (106), a biomass transfer unit (108), a recovery module (110), and an effluent withdrawal unit (114). The proposed method directly yields a low-suspended solids, phosphorus-rich aqueous liquor with orthophosphate concentration ≥20 mg/L and TSS 200 mg/L, suitable for downstream processing without extensive purification or sludge handling.

No. of Pages : 63 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025

(21) Application No.202511132471 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Autonomous Heat-Activated Fire-Suppressing Brick and Wall System

(51) International classification	:E04B 2/02, E04C 1/41, E04C 1/40, A62C 2/06, A62C 3/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dipika Kashyap

(57) Abstract :
[0039] The present invention discloses a fire-suppressing construction brick and wall system. Each brick comprises a structural body and at least one sealed metallic chamber embedded within the body, the chamber being pre-filled with a fire-suppressant chemical composition and mechanically isolated by an energy-absorbing support. When exposed to fire, heat and internal pressure cause controlled rupture of the chamber within 5–10 seconds, dispersing suppressant into the flame zone while the brick substantially retains structural integrity. Multiple bricks installed in a wall provide distributed, autonomous fire suppression without external water, power, plumbing, or user intervention. The system is suitable for dense, low-resource settlements and affordable housing. Methods for manufacturing the brick, configuring the chambers in patterned arrays, and using the wall system for passive protection of buildings are also described. Biomimicry-inspired geometry and spring-based shock absorption enable reusability, reduced wall damage, and scalable integration into standard masonry construction workflows worldwide for housing. (Accompanied Figure No. 1-5)

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/07/2025
(21) Application No.202511065611 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR CUTTING-OFF BATTERY BETWEEN BATTERY CONTROL UNIT AND IOT DEVICES

(51) International classification	:H01M10/42, H02J7/40, H02J7/60, H02J7/80, H02H7/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A system 100 to monitor error communication include a battery pack 102 supplying power to IoT devices 104; and a battery control unit 106 such that the battery pack 102 and the battery control unit 106 are in communication through one or more interfaces 110 to form a loop. The battery control unit 106 is configured to generate a heartbeat signal 116 to the battery pack 102 through the loop, and the system 100 cut-off the battery pack 102 from the loop in case the heartbeat signal 116 is failed to reach back to the battery control unit 106 through the loop defining detection of at least one critical operational condition responsible for system 100 failure. However, system 100 protect to cut-off the battery pack 102 from the loop, in case heartbeat signal 116 is absent due to cyber security threats, tempering, and poor communication network

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132633 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUGMENTED-REALITY BASED SYSTEM FOR EXPERIENTIAL LEARNING TO CULTIVATE PROSOCIAL PERSONALITY TRAITS

(51) International classification	:G09B 19/00, G06T 19/00, G09B 5/06, A61B 5/16, G09B 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)ABHISHEK CHARAN

(57) Abstract :
The present disclosure provides a system for facilitating experiential learning directed toward cultivation of prosocial personality traits. The system comprises an augmented-reality display apparatus configured to render interactive visual and auditory content representing emotionally and ethically complex interpersonal scenarios within a physical environment. The system further comprises a processing device operatively associated with the augmented-reality display apparatus to acquire and analyze behavioral and emotional data of learners, generate adaptive response signals to modify said interactive content in real time, and evaluate longitudinal progression of prosocial traits through psychometric assessment. An educator dashboard interface is linked with the processing device to display analytical metrics indicating individual and group development for instructional assessment and curriculum refinement. Fig. 1 Dated December 20, 2025 / Kumar Tushar Srivastava IN/PA-3973 Agent for the Applicant

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132634 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE DIALOGUE BAND FOR FACILITATING BEHAVIORAL CHANGE THROUGH NONVIOLENT COMMUNICATION

(51) International classification	:G06F 3/01, G09B 21/00, G10L 15/22, G06F 3/16, H04M 1/72412
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure provides a system for facilitating behavioural change through structured nonviolent communication. The system comprises a wearable dialogue band configured to receive user-generated communication input and to deliver empathetic feedback cues through tactile or auditory output. A processing framework is operatively connected to the wearable dialogue band and analyses the communication input in accordance with observation, feeling, need, and request parameters. A feedback generation engine produces responsive prompts representative of rephrasing guidance consistent with nonviolent communication principles. A storage module records the communication input and the responsive prompts for adaptive refinement of subsequent behavioural interactions. Fig. 1 Dated December 20, 2025 / Kumar Tushar Srivastava IN/PA-3973 Agent for the Applicant

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132635 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM FOR DECENTRALIZED AND NONVIOLENT REDISTRIBUTION OF COMMUNITY RESOURCES

(51) International classification	:G06Q 50/26, G06Q 50/00, G06Q 10/06, G06Q 30/02, G06Q 10/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)ABHISHEK CHARAN
5)DR. RAVINDRA SINGH RATHORE

(57) Abstract :
The present disclosure provides a system for decentralized and nonviolent redistribution of community resources. The system comprises a community interface station configured to receive registration data associated with surplus and required resources from participants of a defined community. A decentralized data ledger records the registration data as immutable entries. A consent-based matching engine determines equitable allocation pairings, while a smart-contract execution unit enforces redistribution conditions and initiates redistribution transactions. A governance control environment facilitates participatory decision-making and accountability, and a conflict-resolution subsystem mediates disputes using consensus-based procedures. A local incentive engine allocates digital incentives to sustain voluntary participation and ethical equilibrium. Fig. 1 Dated December 20, 2025 / Kumar Tushar Srivastava IN/PA-3973 Agent for the Applicant

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202511027672 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENHANCED FILING SYSTEM FOR COURT RECORDS TO IMPROVE ACCESSIBILITY AND ACCURACY

(51) International classification	:G09B5/06, G09B19/00, G09B9/06, G16H20/70, A61B5/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Raghuveer Raghumahanti
6)Anjali Belwal
7)Abhishek Kumar Sandilya
(72)**Name of Inventor :**
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2)Parul R Agrawal

(57) Abstract :
The present invention relates to a multi-functional cognitive training board designed to enhance sensory stimulation, cognitive development, and motor skill improvement in children with developmental delays and sensory processing disorders. The invention comprises a lightweight interactive whiteboard embedded with RGB LED lighting, magnetic interactive elements, and vibratory feedback mechanisms. The board is divided into multiple sections featuring removable magnetic alphabet letters for literacy development, magnetic animal-shaped cutouts for cognitive recognition and spatial awareness, and a vibratory feedback section for tactile stimulation. The device operates via a dual-power system, supporting both an electrical power supply and a rechargeable battery, ensuring portability. A remote control enables real-time adjustments to the RGB lighting effects, vibratory feedback intensity, and sequencing of interactive elements, allowing caregivers and therapists to tailor sensory exercises to individual needs. The invention provides an engaging, adaptive, and safe developmental tool for children requiring therapeutic support in sensory and motor skill enhancement.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025

(21) Application No.202511132821 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR SECURE, DECENTRALIZED DEVICE-TO-DEVICE COMMUNICATION IN AN IOT NETWORK

(51) International classification	:H04L 9/08, H04L 9/32, H04L 29/06, H04L 9/40, H04L 9/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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10)Dr. P. Deepa

(57) Abstract :
[046] The present invention discloses a system and method for secure, decentralized device-to-device communication in an Internet of Things (IoT) network. The system enables IoT devices to communicate directly with one another using unique decentralized identities, mutual authentication, and dynamically generated session keys, without reliance on centralized servers. A distributed trust management module continuously evaluates device behavior and updates trust scores, while a lightweight distributed ledger maintained by edge nodes ensures tamper-resistant storage of identity references, trust records, and communication metadata. The invention provides encrypted peer-to-peer communication channels, fault-tolerant operation, and scalability across heterogeneous IoT environments, thereby enhancing security, privacy, resilience, and energy efficiency. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511132841 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Method for Estimating Postmortem Interval Using Yeast and Fungal Thanatomicrobiome Signatures

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Harshita Tiwari
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3)Dr. Tripti Bhatnagar
4)Dr. Baljeet Yadav

(57) Abstract :
The invention relates to forensic estimation of postmortem interval (PMI) using yeast and filamentous fungal thanatomicrobiome signatures in visceral organs. Liver and/or kidney tissues are incubated under defined temperature and oxygen conditions and sampled at set times. Yeast and fungi are identified using staining, biochemical tests, and ITS/18S sequencing. Diagnostic taxa, including Candida spp., Lachancea thermotolerans, Yarrowia lipolytica, Trichoderma verruculosum, and Gliocladium spp., are correlated with specific time–temperature regimes to infer PMI via a reference model, providing a robust alternative to traditional PMI methods.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511132843 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Management Decision-Support System for Real-Time Fatigue and Performance-Risk Control in Eye-Care Organisations

(51) International classification	:A61P 43/00, A61Q 90/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Prof. Ajai Agrawal
2)Dr.Seema Bhakuni

(57) Abstract :
The present invention discloses a management decision-support system that integrates real-time data acquisition, fatigue analytics, risk prediction algorithms, and managerial control dashboards specifically tailored for eye-care organisations. The system collects data from multiple sources including biometric sensors, workload logs, shift schedules, screen exposure duration, surgical task intensity, and self-reported fatigue inputs. Advanced analytics and machine learning models process this data to generate a Fatigue Risk Index (FRI) and Performance Risk Score (PRS) for individual staff members and departments. Based on predefined thresholds and predictive models, the system provides actionable recommendations to management such as workload redistribution, mandatory rest breaks, task reassignment, and staffing augmentation in real time.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133131 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR AUTONOMOUS THREAT DETECTION IN AN ENVIRONMENT

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)DR. Anjali
5)DR. S, Lakshmi

(57) Abstract :
The present invention relates to a system (100) and a method (300) for autonomous threat detection in an environment. The system (100) may include at least one camera (102) configured to capture visual data associated with a surrounding environment, at least one audio interface (104) configured to provide audio information to and receive user input from a user and an embedded processing unit (106) coupled to the at least one camera (102) and the audio interface (104). The embedded processing unit (106) may detect at least one of a threat and environmental hazard associated with the environment using an on-device Artificial Intelligence (AI) model based on the captured visual data and the received user input. The embedded processing unit (106) may classify the detected at least one of the threats and the environmental hazard and generate a real-time alert to the user based on the threat and the environmental hazard.

No. of Pages : 41 No. of Claims : 32

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133141 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEVELOPMENT AND CHARACTERIZATION OF ENTERIC COATED ALGINATE HYDROGEL BEADS LOADED WITH RESVERATROL AND NOSCAPINE FOR COLITIS MANAGEMENT.

(51) International classification	:G03C 8/36, G03C 5/30, G03C 7/413, G03C 8/40, G03C 5/315
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This study developed enteric-coated alginate hydrogel beads co-loaded with resveratrol and noscapine for targeted ulcerative colitis therapy. Beads were prepared by ionotropic gelation, optimized via QbD, and coated with Eudragit S100 for pH-dependent colonic release. Characterization confirmed suitable size (1.4–1.8 mm), high entrapment efficiency (70–75%), and no drug–polymer incompatibility (FTIR, DSC). In vitro, uncoated beads showed 20% drug release within 4 h, while coated beads restricted release (20% in 5 h) and achieved sustained colonic release. Kinetic modeling indicated zero-order release for uncoated and Korsmeyer–Peppas fitting for coated formulations. Overall, the enteric-coated beads demonstrated effective colon targeting and strong potential in ulcerative colitis management.

No. of Pages : 26 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133170 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : COLLABORATIVE NETWORKED SURVEILLANCE SYSTEM

(51) International classification	:B64U 101/31, G06Q 20/20, H04L 67/1097, H04L 41/28, H04W 84/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A collaborative networked surveillance system, comprising a network of fixed cameras 201 installed across a region continuously capturing visual data, one or more UAV 100 configurable in a swarm for aerial surveillance of the region, each UAV 100 configured with at least one brushless motor regulated by electronic speed controllers (ESCs) for propulsion, an interchangeable pod 101 detachably mountable with the UAV 100 containing one or more of a camera unit 102, sensor array 103, communication relay and emergency-response payload, a main station 202, a standby station 203, and area stations 204, a Cognitive Command Architecture (CCA) with multi-layer anomaly-assessment and classification modules, local control modules at area stations 204, a docking arrangement 104 for pod 101 management, and a logging module for tamper-proof storage, enabling dynamic UAV 100 deployment, cooperative surveillance, real-time anomaly detection, predictive monitoring, and continuous verified data capture.

No. of Pages : 52 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133171 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEVELOPMENT AND CHARACTERIZATION OF FOLIC ACID CONJUGATED CHITOSAN NANOPARTICLES OF NOSCAPINE AND RESVERATROL FOR THE MANAGEMENT OF COLON CANCER

(51) International classification	:G03C 8/36, G03C 5/30, G03C 7/413, G03C 8/40, G03C 5/315
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The procedure entails the development of folic acid-conjugated chitosan nanoparticles co-loaded with noscapine and resveratrol, designed for targeted delivery to the colon. The nanoparticles are prepared using the ionic gelation method, followed by surface conjugation with folic acid. The resulting formulation exhibits high stability, enhanced entrapment efficiency, controlled release, and improved bioavailability of the encapsulated drugs. Furthermore, folic acid conjugation enables receptor-mediated uptake by colon cancer cells, thereby ensuring site-specific targeting and minimizing systemic toxicity. The invention combines the synergistic anticancer effects of noscapine and resveratrol with the benefits of nanotechnology-based drug delivery, resulting in a promising therapeutic approach for colon cancer. The characterization methods of the invention include particle size analysis, PDI, entrapment efficiency, FTIR, DSC, SEM and in-vitro drug release thereby ensuring quality, efficacy, and safety of the nanoparticles. This innovative nanocarrier system has the potential to significantly improve the treatment of colon cancer by enhancing therapeutic efficacy, reducing adverse effects, and improving patient compliance, ultimately leading to better clinical outcomes and quality of life.
No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132636 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM FOR EMBEDDING NONVIOLENT ETHICAL VALUES IN ORGANISATIONAL DECISION-MAKING STRUCTURES

(51) International classification	:G06N 5/04, G06N 5/02, G06Q 10/06, G06Q 10/10, G06F 16/33
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)DR. SHRUTI DADHICH

(57) Abstract :
The present disclosure provides a system for embedding nonviolent ethical values within organisational decision-making structures. The system comprises a sensing unit configured to acquire contextual data representative of stakeholder interactions, proposed decisions, communication exchanges, and organisational objectives. The system further comprises a processing unit communicatively coupled with the sensing unit. Said processing unit is configured to analyse contextual data, derive sentiment and intent information, evaluate proposed decisions through computation of an ethical impact index, generate and rank decision alternatives, produce constructive linguistic expressions aligned with nonviolent reasoning, and utilise adaptive feedback data obtained from stakeholder responses for iterative refinement of evaluation parameters to maintain alignment of subsequent decisions with ethical reasoning. Fig. 1 Dated December 20, 2025 / Kumar Tushar Srivastava IN/PA-3973 Agent for the Applicant

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132706 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN INTELLIGENT CIRCULAR ECONOMY MANAGEMENT PLATFORM FOR AUTOMATED WASTE MINIMIZATION AND OPTIMIZED RESOURCE REUSE

(51) International classification	:G06N 20/00, G06Q 10/06, G06Q 10/08, G06Q 50/26, G06Q 30/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Prabhat Kumar Sharma
4)Dr. Priyam Vishwakarma
5)Mr. Sagar Sharma
6)Ms. Shikha Jain
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2)Dr. Alok Mishra
3)Dr. Prabhat Kumar Sharma
4)Dr. Priyam Vishwakarma
5)Mr. Sagar Sharma
6)Ms. Shikha Jain

(57) Abstract :
[046] An intelligent circular economy management platform for automated waste minimization and optimized resource reuse is disclosed. The platform integrates Internet of Things sensors, artificial intelligence, machine learning, and advanced analytics to monitor waste generation, classify material streams, evaluate reuse potential, and recommend recovery, recycling, or repurposing actions. It enables real-time decision-making across industrial, municipal, and commercial ecosystems by coordinating stakeholders, optimizing logistics, and ensuring regulatory compliance. The system supports closed-loop material flows, reduces landfill dependency, enhances resource efficiency, and provides actionable insights through centralized dashboards and continuous learning, thereby facilitating a systematic transition from linear waste management to a sustainable circular economy. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132710 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR FEDERATED ARTIFICIAL INTELLIGENCE–BASED PRIVACY-PRESERVING LEARNING IN SMART DEVICES

(51) International classification	:G06N 20/00, H04L 9/00, G06F 21/62, H04L 9/08, H04L 9/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Rajeev Gupta
6)Dr. Amrita Bhatnagar
7)Pronab Kumar Adhikari
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2)Anjali Singh
3)Sonali Gahlot
4)Ms. Harnit Saini
5)Rajeev Gupta
6)Dr. Amrita Bhatnagar
7)Pronab Kumar Adhikari

(57) Abstract :
[035] The present invention provides a system and method for federated artificial intelligence–based privacy-preserving learning across a plurality of smart devices. Each device locally trains a machine learning model using private data and transmits only encrypted model updates to a federated coordination entity for secure aggregation. The system incorporates privacy-preserving techniques such as differential privacy, homomorphic encryption, and secure multiparty computation to prevent exposure of sensitive information. Adaptive device participation, fault-tolerant aggregation, and anomaly detection mechanisms ensure robustness, scalability, and security across heterogeneous smart device networks. The invention is applicable to healthcare, smart homes, industrial IoT, autonomous transportation, and other intelligent distributed environments, providing efficient, privacy-compliant, and collaborative AI model training. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132516 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED CLOUD SECURITY SYSTEM FOR THREAT PREDICTION AND MITIGATION

(51) International classification	:G06N 20/00, H04L 29/06, H04L 9/40, G06F 21/57, G06F 21/55
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Shilpa Sharma

(57) Abstract :
The present invention discloses an AI-powered cloud security system for predictive threat detection and autonomous mitigation. The system continuously collects multi-source telemetry from cloud environments, normalizes and enriches the data, and constructs a dynamic Behavior and Risk Graph representing users, assets, and their interactions. An AI-based prediction engine analyzes sequential and graph-based data to forecast multi-stage attack progression, including lateral movement, privilege escalation, and data exfiltration. Predicted threats are mapped to automated mitigation strategies, which may include isolating workloads, rotating credentials, restricting access, or deploying deception mechanisms. Reinforcement learning continuously optimizes response effectiveness, while federated learning enables cross-tenant intelligence sharing without exposing raw data. A human-in-the-loop console provides visualization, monitoring, and override capabilities.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132517 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LumoIntelliSense: SMART LIGHT VANTELLATION AND MOBILE DETECTION SYTEM

(51) International classification	:H05B 44/00, H05B 37/02, H04W 4/80, F21V 23/04, H05B 47/105
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)DR. VIJAY MOHAN SHRIMAL
2)Deven

(57) Abstract :
The present invention provides a smart environmental control system, LumoIntelliSense, that integrates personalized illumination regulation with context-aware mobile-device usage detection. The system measures natural and artificial light using multi-sensor inputs and converts raw lux data into user-specific illumination units to achieve task-oriented lighting through automated multi-layer curtain adjustment and dimmable LEDs. A sensor-fusion mobile detection module combines BLE/Wi-Fi patterns with environmental cues such as proximity, occupancy, and lighting changes to accurately identify active mobile-phone usage while filtering out wearable devices. All processing occurs locally via edge computing to preserve privacy and ensure real-time response. By unifying lighting control and device monitoring within a single platform, the invention enhances comfort, productivity, and digital discipline in classrooms, offices, and residential spaces.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025

(21) Application No.202511132518 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE THERMAL WEARABLE SYSTEM EMPLOYING AI DRIVEN ENVIRONMENTAL SENSING AND CONTROL

(51) International classification	:F25B 21/02, A61B 5/01, A61B 5/00, G05D 23/19, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Siddharth Arora

(57) Abstract :
The present invention relates to an Adaptive Thermal Wearable System Employing AI-Driven Environmental Sensing and Control for providing autonomous, personalized, and energy-efficient thermal regulation in dynamic or extreme environments. The system integrates environmental sensors measuring ambient temperature, humidity, and wind conditions with physiological sensors monitoring skin temperature, heart rate, and sweat rate to generate a comprehensive real-time thermal profile of the user. An embedded AI-based adaptive control unit analyzes sensor data using predictive algorithms to determine thermal needs and selectively activates a hybrid thermal regulation module comprising passive phase change materials (PCMs) and active thermoelectric cooling/heating (TEC) elements. A power management unit optimizes energy consumption, while an optional energy-harvesting system extends operational duration. A wireless user interface allows real-time monitoring and manual adjustments. The invention provides intelligent, responsive, and localized thermal management, overcoming limitations of conventional heated garments through improved comfort, safety, energy efficiency, and adaptability across diverse environmental conditions.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131886 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MONKEY REPELLENT- CARBIDE GAS CARTRIDGE

(51) International classification	:A01M 29/12, A01M 29/06, A01K 13/00, A01M 29/00, A01P 17/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Shalini Sharma
2)Dr. Sukhmani Kaur
3)Gaganjot Kaur

(57) Abstract :
The present invention provides a safe, economical, and controlled monkey repellent device designed to generate acetylene gas through a regulated interaction between calcium carbide and water. The device comprises an upper water chamber, a lower dry chamber containing a sealed breathable pouch of calcium carbide, a calibrated drip mechanism for gradual water delivery, and a cotton- or porous-filled gas outlet vent for moderated gas diffusion. When water drips onto the carbide pouch, acetylene gas is produced in gentle, sustained quantities and is released safely through the filtered outlet, creating a pungent odour effective in deterring monkeys from rooftops, balconies, farms, and public spaces. The sealed pouch eliminates direct handling of carbide, while the drip-controlled reaction prevents sudden gas release and ignition risks. Constructed from simple, low-cost materials such as PVC or plastic bottles, the device offers an eco-friendly, reusable, and user-friendly solution to mitigate monkey intrusions without harming anything.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131887 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE SMART BANDAGE FOR TARGETED DRUG RELEASE AND HEALING PROGRESS MONITORING

(51) International classification	:A61F 13/00, A61B 5/00, A61M 35/00, A61B 5/01, A61B 5/145
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Inzamam Ul Huque
4)Dr. Rizwan Yousuf
5)Dr. Anurag Srivastava

(57) Abstract :
The present invention relates to a smart, flexible bandage capable of real-time wound monitoring and on-demand drug release. The system integrates micro-needle technology with embedded sensors to detect key wound parameters such as pH, temperature and moisture. A microcontroller processes sensor inputs and triggers-controlled drug release based on wound conditions. The device wirelessly communicates with a companion mobile application, providing continuous updates on wound healing progression. The proposed solution reduces infection risk, enhances recovery time and minimizes hospital visits through autonomous care.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131888 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GATE-LESS TOLL COLLECTION AND VEHICULAR EMISSION MONITORING SYSTEM WITH AUTOMATED COMPLIANCE ENFORCEMENT

(51) International classification	:G07B 15/06, G08G 1/017, G06K 9/00, G07B 15/02, G08G 1/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Asma Fayaz
2)Dr. Saboor Fayaz

(57) Abstract :
The present invention discloses a gate-less toll collection and real-time vehicular emission monitoring system that integrates automated payment processing, environmental compliance assessment, and non-intrusive speed regulation. The system eliminates physical toll barriers by employing FASTag readers and Automatic Number Plate Recognition (ANPR) cameras mounted on overhead gantries for seamless vehicle identification and toll deduction. To maintain consistent sensing accuracy, the roadway includes rumble strips and speed cushions that naturally moderate vehicle speed without requiring stoppage. Infrared and ultraviolet remote sensing units continuously measure exhaust emissions as vehicles pass through the monitoring zone. An edge computing unit performs rapid local processing and transmits validated data to a cloud platform linked with national databases such as VAHAN and pollution control boards. The system enables automated enforcement, reduces congestion, minimizes fuel wastage, and supports scalable, sustainable, and intelligent transport infrastructure

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202511131889 A
(19) INDIA
(22) Date of filing of Application :26/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART YOGA WELLNESS SYSTEM WITH MULTIMODAL PHYSIOLOGICAL AND BIOFIELD MONITORING

(51) International classification	:A63B 24/00, A63B 6/00, A63B 26/00, A63B 71/06, A61B 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Vinita Jarial
3)Nikhil Kumar Singh

(57) Abstract :
The present invention introduces a smart yoga mat integrating a pressure sensor grid, IoBNT nanosensors, and quantum biofield resonance sensors for comprehensive multimodal health monitoring. The system measures posture alignment, sweat-based biochemical markers, and subtle electromagnetic variations associated with pranic energy flow. Data is processed using artificial intelligence to classify poses, evaluate stress-release levels, and map chakra alignment. Real-time corrective feedback is delivered via haptic, audio, and augmented-reality guidance, with adaptive learning based on historical session trends. Unlike conventional smart mats that focus only on posture or basic biometrics, the invention uniquely merges biomechanical, biochemical, and energetic diagnostics, enabling a holistic wellness experience aligned with authentic yoga principles

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132519 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A HARDWARE–SOFTWARE INTEGRATED CYBERSECURITY SYSTEM

(51) International classification	:G06F 21/57, H04L 29/06, H04L 9/32, H04L 9/08, H04L 9/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Er. Prashant Ahluwalia
4)Er. Ankita Sharma
5)Er. Priyanka Sharma

(57) Abstract :
The present invention relates to a hardware–software integrated cybersecurity system that provides secure, authenticated, and tamper-resistant vulnerability assessment of websites, networks, and IP addresses. A hardware–software integrated cybersecurity system comprising: a microcontroller configured to interface with a secure cryptographic element via an I²C communication bus; a laptop or computing device executing a software-based vulnerability scanning module; and a hardware authentication module implemented by the secure cryptographic element, the secure cryptographic element being configured to generate, store, and utilize private cryptographic keys without exposing said keys externally. The microcontroller is configured to receive authentication challenges from the software module, transmit the challenges to the secure cryptographic element, and return signed authentication responses to the software module. The software module is configured to enable or restrict vulnerability scanning operations based on the authentication response generated by the secure cryptographic element.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132520 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN INSTRUMENTED FOOD CONTAINER SYSTEM FOR REAL-TIME PORTION ANALYSIS AND MICROBIOME-PERSONALIZED NUTRIENT AND CALORIC ESTIMATION

(51) International classification	:G01G 19/52, G01G 19/414, G01G 3/14, G01G 21/28, A47J 36/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Dr. Swaati Sharma

(57) Abstract :
The present invention relates to an instrumented food container system integrating precise load sensing, secure electronics housing, and controlled communication capabilities for real-time dietary monitoring and data processing. The system comprises a food-contact vessel with a removable insert (101), a load-cell assembly (102) for accurate weight measurement, and a sealed electronics compartment (103) housing a microprocessor (104), power supply (105), and communication modules (106). An electromagnetic shielding enclosure (107) protects internal electronics from external interference, while an onboard memory unit (108) ensures reliable storage of measurement data and operational parameters. A hardware RF-disable switch (109) provides a tamper-resistant mechanism for physically disabling all wireless communication when required for privacy, regulatory compliance, or interference prevention. The invention provides a hygienic, durable, and highly accurate smart vessel solution capable of integrating with digital health platforms, supporting nutritional analysis, and operating reliably in environments with strict electromagnetic and data-security constraints.
No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132521 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : QUANTUM-ENABLED REAL-TIME DIAGNOSTIC SYSTEM FOR ADVANCED ENERGY STORAGE DEVICES

(51) International classification	:H01M 10/48, G06N 10/00, G01R 31/36, G01R 31/392, G01R 31/367
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Meenakshi Gusain
2)Akshara Bassi
3)Dr. Aman Grover
4)Dr. Aman Kataria

(57) Abstract :
The invention discloses an integrated quantum-enabled diagnostic and control system for real-time monitoring and predictive health assessment of energy storage devices. The system incorporates quantum sensors positioned within or adjacent to the battery to detect nanoscale physical and electrochemical signatures, including magnetic flux variations, thermal anomalies, vibrational changes, and quantum spin interactions. The acquired data is processed through a signal conditioning layer and analyzed using a hybrid quantum–classical computing architecture employing quantum algorithms for high-precision diagnostic interpretation. A real-time diagnostic engine generates outputs such as state-of-charge, state-of-health, degradation forecasting, and failure prediction. An adaptive control interface communicates these insights to the battery management system, enabling autonomous optimization of operational parameters, including charging rate, thermal regulation, and safety responses. The invention enhances accuracy, safety, lifespan, and performance of energy storage systems, providing a transformative improvement over conventional diagnostic methods.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131762 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GREEN RETROSYNTHESIS RECOMMENDATION ENGINE FOR PHARMACEUTICAL SCAFFOLDS USING TRANSFORMER MODELS WITH REACTION CONDITION CONSTRAINTS

(51) International classification	:G06Q 10/04, G06Q 10/06, G06Q 50/04, G06N 5/04, G06N 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Ravi Rawat
3)Dr. Shweta Sharma
4)Ravi Bhagat

(57) Abstract :
A condition-optimized retrosynthesis system (100) is disclosed, comprising an encoding module (102), a condition-aware prediction module (104), a constrained route-planning module (106), and a sustainability scoring module (108). The system (100) jointly predicts single-step disconnections and feasible reaction conditions, constructs multi-step routes under solvent, temperature, and safety constraints, evaluates sustainability metrics, and outputs ranked synthetic pathways. A corresponding method (200) includes steps for encoding input molecules (202), generating condition-aware retrosynthetic predictions (204), and producing optimized multi-step routes with sustainability assessments (206). The invention provides environmentally compliant, scalable retrosynthetic solutions for pharmaceutical manufacturing.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131763 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN IMPROVED AGARBATHI COMPOSITION FOR MINIMIZING HEALTH RISKS ASSOCIATED WITH SMOKE EMISSIONS

(51) International classification	:A61Q13/00, A61K8/02, A61K8/18, A61K8/72, A61K8/73, A61K47/44, A61K8/92, A61K47/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Shweta Sharma
4)Ravi Rawat
5)Bhawana Duggal
6)Anamika Kulshrestha
7)Pooja Chaurasia
8)Priya Pandey

(57) Abstract :
An improved agarbathi manufacturing system (100) is disclosed, comprising a binder-storage and mixing container (102) for guar gum, plant starches, and natural powders; a combustion-modifier blending unit (104) configured to incorporate eco-friendly additives; a paste-forming and shaping module (106) for producing incense sticks; and a drying and finishing module (108) for stabilizing the final product. A corresponding method (200) includes preparing a low-emission binder mixture (202), forming and shaping the agarbathi paste into sticks (204), and drying and finishing the product (206). The invention reduces particulate matter, VOCs, CO, and PAH emissions through the integration of natural binders, herbal additives such as neem and tulsi, and activated charcoal, enabling safer indoor use.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025

(21) Application No.202511131764 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-GUIDED PIPELINE FOR REPURPOSING FDA-APPROVED DRUGS USING MULTI-OMICS GRAPH NEURAL NETWORKS AND MECHANISM-CONSTRAINED SCREENING

(51) International classification	:G16H 70/40, G16H 20/10, G16H 50/70, G06N 5/02, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides a computer-implemented system (100) and method for repurposing approved drugs using a mechanism-constrained multi-omics platform. The system (100) includes a data ingestion module (102), a knowledge-graph constructor (104), a constraint encoder (106), and a ranking and explanation engine (108). The method (200) includes steps of constructing a disease-centric knowledge graph (202), training a graph neural network with mechanistic constraints (204), and generating ranked drug-indication predictions with pathway-level rationales and biomarkers (206). Biological constraints include pathway directionality, causal consistency, toxicity exclusion, and drug–disease alignment. The invention enhances biological plausibility, reduces false positives, and provides explainable, translationally actionable repurposing hypotheses.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202511131787 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD AND SYSTEM FOR DYNAMICALLY INVOKING REST WEB SERVICES THROUGH A LARGE LANGUAGE MODEL

(51) International classification	:G06F 17/30, G06F 17/27, G06F 16/332, G06F 16/33, G06F 16/951
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Konduru Venkat Sai
3)Navin Sabarwal
4)Arvind Maurya
5)Atul Singh

(57) Abstract :
The present disclosure relates to method (400) and system (100) for dynamically invoking REST web services through a large language model (LLM). The method includes determining one or more keywords based on an analysis of a user query for invoking the REST web services using a first LLM. The method further includes determining a first set of endpoints from a predefined repository based on a keyword similarity search between the one or more keywords and data of the predefined repository. Further, the method may include computing a weighted relevance score for each of the first set of endpoints by evaluating semantic similarity, path structures similarity, and operation parameter relevance. The method may further includes selecting and executing a highest-ranked endpoint from the first set of endpoints having a highest weighted relevance score for invoking the REST web services. (To be published with Figure 1)

No. of Pages : 30 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132251 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR EXPLAINABLE MULTI-MODAL OBJECT LOCALIZATION WITH REAL-TIME 2D–3D PERCEPTION IN AUTONOMOUS SYSTEMS

(51) International classification	:G01S 17/89, G01S 17/86, G06N 3/08, G05D 1/02, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Prins Kanyal
3)Sujal Thapa
4)Dr. Chandradeep Bhatt
5)Dr. Anupam Singh

(57) Abstract :
The invention relates to autonomous systems and discloses a system that integrates multi-modal sensing with explainable object localization. The system features an RF-DETR module (20) for processing raw RGB image data using an encoder-decoder transformer and a hybrid Hungarian loss to generate intermediate spatial features, which are further processed by a GLEE module (30) employing global average pooling and softmax activation to produce spatial attention maps. A LiDAR–Camera Fusion module (40) projects LiDAR point clouds onto a 2D image plane to establish a shared latent space with RGB features, ensuring geometrical alignment via an alignment loss. The fused data is processed by a 3D-JEPA module (50) using a contrastive learning framework to encode geometric and temporal scene correlations, which are subsequently aligned with text embeddings via a Vision-Language Transformer module (60). A camera calibration module (70) supports precise sensor integration.

No. of Pages : 14 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132252 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR ADAPTIVE SELF-HEALING OF CLOUD INFRASTRUCTURES UTILIZING MULTI-AGENT ARCHITECTURE, LSTM-BASED FAULT PREDICTION, AUTOENCODER ANOMALY DETECTION, REINFORCEMENT LEARNING, AND A HEALING EFFICIENCY INDEX

(51) International classification	:G06N 3/04, G06N 3/08, H04L 12/24, G06F 11/07, G06N 3/0442
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Yuvraj Kabadwal
3)Raj Basnet
4)Dr. Chandradeep Bhatt
5)Dr. Anupam Singh

(57) Abstract :
The invention pertains to cloud infrastructure management and introduces a system that employs a plurality of autonomous monitoring agents (10) for real-time telemetry data acquisition connected to a predictive analytics module (20) with an LSTM network for time-series fault forecasting. An anomaly detection module (30) using autoencoder neural networks reconstructs data to identify deviations from normal operations, while a fault classification unit (40) correlates predictive and anomalous outputs to classify faults. A reinforcement learning decision-making layer (50) dynamically selects recovery actions based on reward signals, and a feedback learning loop (60) with a HEI module (62) quantifies healing performance, which is fed back to optimize system predictions and responses. This integrated approach ensures adaptive, automated self-healing of cloud infrastructures through continuous, secure real-time interaction.

No. of Pages : 23 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132253 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EMBEDDED IOT AND AI-DRIVEN SYSTEM AND METHOD FOR PREDICTIVE DURABILITY ANALYSIS OF COMPOSITE CONSTRUCTION MIXTURES

(51) International classification	:G06N 20/00, G01N 33/38, G06N 5/04, G06N 20/20, G01N 33/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A system for predictive durability analysis integrates a sensor rod (101) embedded within a composite construction mixture during its curing phase, equipped with heterogeneous sensors (102) that transduce physical and chemical properties into electrical signals. A wireless communication module (103) transmits real-time data to a data acquisition and preprocessing unit (104), which cleans, synchronizes, and normalizes the signals. The processed data is analyzed by an AI-driven predictive analytics module (105) employing machine learning models such as Long Short-Term Memory, Random Forests, and Gradient Boosting algorithms to predict long-term durability metrics. The real-time outputs, including sensor readings and predictive durability curves, are displayed on a decision support dashboard (106). The invention, pertaining to the field of composite construction monitoring, also includes methods for calibrating and strategically embedding the sensor rod to enhance predictive accuracy under variable construction site conditions.
No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025

(21) Application No.202511132890 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHODS AND COMPOSITIONS FOR TREATING DIABETIC NEPHROPATHY USING EXTRACTS FROM CORNUS CAPITATA WALL EX. ROXB.

(51) International classification	:A61K9/00, A61K47/00, A61P7/12, A61K36/40, A61P3/10, A61K127/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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4)Dr. Arun Kumar Mahato
5)Dr. Arvind Singh Farswan
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7)Dr. Srishti Dora

(57) Abstract :
A therapeutic composition for treating diabetic nephropathy is disclosed, comprising a methanolic extract of the leaf of Cornus capitata Wall Ex. Roxb. The composition is administered to a subject in need thereof to significantly decrease blood glucose, body weight, and key markers of kidney dysfunction, including BUN, uric acid, and creatinine. The inventive composition also increases beneficial serum total protein and albumin levels while providing potent antioxidant protection by reducing malondialdehyde and nitrates and restoring endogenous antioxidant enzymes like SOD and GSH in renal tissue. The disclosure further provides a method for improving the histological integrity of pancreatic and nephritic cells. The disclosed composition and method offer a novel and effective approach to managing the renal complications of diabetes.

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511132933 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Smart Social Engagement Analyzer Device

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a smart social engagement analyzer device to capture process and visualise real-time engagement data from physical and digital environments. The device comprises a high-resolution display, configurable soft-keys and rotary controls with embedded processors, wireless connectivity and multimodal sensor inputs such as microphones, cameras and wearable tags. Incoming behavioural and interaction data are filtered, anonymised and analysed by onboard analytics modules that compute indicators including attention levels, participation, sentiment and group dynamics. Results are rendered as intuitive dashboards, alerts and trend timelines on the front display, enabling facilitators to adapt content, pacing or seating arrangements instantly. Local solid-state storage and secure cloud synchronisation support longitudinal analysis and report generation. The system is suitable for classrooms, corporate training, events and public installations where objective, privacy-aware measurement of social engagement is needed to improve learning outcomes, collaboration quality and audience experience using transparent, ethical and inclusive methods.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025

(21) Application No.202511132956 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An Intelligent Shooting Performance Analysis System using Athlete Data

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an intelligent shooting performance analysis system using athlete data. The system comprises a display unit and processing unit to record, store, and analyze multiple performance-related parameters including diet, exercise routines, shooting history, dates of practice or competition, and grip feel. The system maps shooting scores with the recorded parameters to identify performance trends and correlations. The system supports three different types of shooting events (i.e. Pistol and Rifle). Pistol shooting cover 10-meter, 25-meter, and 50-meter events, whereas rifle shooting includes 10 Meter, 50 Meter. An athlete (An athlete or shooter) registered in this app and started maintaining his/her record. Based on this mapping, athletes can analyze his/her performance by mapping all entries and come up with some decision. The proposed system assists individual athletes in tracking progress, optimizing training strategies, and enhancing overall shooting performance, and may be implemented as a standalone or network-based application.

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132254 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR GENOME-SCALE DATA COMPRESSION AND SEARCH BASED ON VIRTUAL 3D SPATIAL MAPPING, DYNAMIC SEGMENTATION, AND WEIGHTED HYPERGRAPH MODELING

(51) International classification	:G16B 30/00, G16B 30/10, G16B 30/20, G16B 50/00, G16B 20/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Dr. Anupam Singh

(57) Abstract :
The invention relates to genome-scale data compression and search in bioinformatics. A genome segmentation engine (10) dynamically segments input genome data (e.g., FASTA, BAM, VCF) by detecting biologically meaningful breakpoints using mutual information and entropy minimization, preserving gene boundaries and regulatory motifs. A virtual three-dimensional spatial mapper (20) assigns spatial coordinates to each segment, while a weighted hypergraph constructor (30) creates a hypergraph where nodes represent segments and hyperedges—weighted by sequence similarity, shared motifs, and spatial proximity—are iteratively refined. A neural-inspired adaptive search module (40) propagates an energy-like signal along hyperedges with higher weights, supported by an integration layer (50) for seamless data transformation and an automated parameter tuning module (60) for real-time performance adjustment.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132306 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS TRANSFORMER OIL ASSESSMENT AND MAINTENANCE DEVICE

(51) International classification	:H01F27/14, H01F27/40, G01R31/62, G01R27/26, G06T7/00, G06V10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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3)Sonal Sood
4)Amandeep Sharma
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6)Nitu Rani
7)Printy Dhadwal

(57) Abstract :
An autonomous transformer oil assessment and maintenance device, comprising a body 101 to be positioned on surface adjacent to transformer, a plurality of pneumatic legs 102 attached beneath body 101, equipped with motorized omnidirectional wheels 103 for providing stability and movement, an artificial intelligence (AI) camera 105 mounted on body 101 for detecting presence of transformer within range, a plate 106 mounted on extendable rod 107 provided with body 101, including temperature sensor to monitor transformer surface temperature, a tool handling arrangement 109 integrated with body 101, to store and operate various tools, a transformer oil depressurization arrangement 114 integrated with body 101 to release pressure from transformer oil tank before sampling, a transformer oil sampling arrangement 121 integrated with body 101, to collect transformer oil samples and a transformer oil tank maintenance arrangement 126 integrated with body 101, to clean, dry, and maintain transformer oil tank after oil sampling.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132307 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTERACTIVE LEARNING ASSISTIVE DEVICE FOR CLASSROOMS

(51) International classification	:A47B 83/02, G09B 5/06, G09B 5/02, A47C 7/62, G06F 3/041
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Simranjit Kaur

(57) Abstract :
An interactive learning assistive device for classrooms, comprising a touchscreen display panel 101 integrated with each classroom desk, configured to provide real-time schedule updates, interactive learning, assignment tracking, and study guidance, a seating unit 102 includes the platform 102a for accommodating a user, a plurality of extendable legs 102b mounted underneath the platform 102a for adjusting height as per requirement, and a set of segmented extendable backrest plates 102c connected via motorized hinges 102d to provide support during sitting, an imaging unit 103 is mounted on the desk via an extendable bar 104, configured to monitor eye activity, reading distance, and detect prolonged eye strain, a microphone 105 monitors ambient classroom noise levels, a leg covering module provides warmth, safety, and comfort to the student's legs, a motorized roller 110 in a reading cavity enables smooth page turning.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132522 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GRAPHENE TITANIUM BIO-INSPIRED HEAT EXCHANGER DEVICE FOR LIGHTWEIGHT THERMAL CONTROL

(51) International classification	:F28F 21/02, F28F 21/08, F28F 13/18, F28F 3/12, F28F 13/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Mitali Gupta

(57) Abstract :
The present invention relates to a graphene–titanium bio inspired heat exchanger device for lightweight thermal control designed to create a highly efficient heat exchanger. The device incorporates a branching microchannel network arranged in a fractal-like pattern. This bio-inspired design ensures that coolant flows evenly across the plate surface, preventing hotspots and maintaining stable temperature control throughout the system. The exchange's main body is constructed from lightweight aluminum, selected for its balance of strength, low weight, and excellent thermal conductivity. To further enhance heat transfer, the aluminum surface is coated with a thin graphene layer that provides superior conductivity and resistance to corrosion. The inlet and outlet connectors are made of titanium, offering durability, vibration resistance, and compatibility with both medical and industrial applications.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132523 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AQUAZEN INTELLIGENT ZERO-WASTE WATER PURIFICATION SYSTEM

(51) International classification	:C02F 1/68, C02F 1/00, C02F 9/00, C02F 1/66, C02F 1/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a AquaZen intelligent zero-waste water purification system designed to introduces a breakthrough in zero-waste drinking water purification, delivering clean water without generating reject streams. Its efficiency stems from a dynamic, sensor-driven quality assessment paired with an adaptive filtration process. The system incorporates an internal mineral-balancing reactor that neutralizes and re-stabilizes TDS, ensuring balanced mineral content in the output. The system further enhances water quality through nano-oxygenation, configurable filtration pathways, and seamless IoT integration, enabling intelligent automation and monitoring. With its design optimized for 0% water loss, precise mineral retention, and smart operation, AquaZen sets a new standard in domestic purification. Operating in low-power or solar-assisted modes, it is equally suited for urban households and rural communities, combining sustainability with advanced technology.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132524 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED SMART CITY ENERGY GRID OPTIMIZATION AND RELIABILITY SYSTEM

(51) International classification	:G06N 20/00, G06Q 50/06, H02J 13/00, G06F 21/62, H02J 3/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Paras Mahajan
4)Navjot Singh Talwandi

(57) Abstract :
The present invention relates to an AI-powered smart city energy grid optimization and reliability system tailored for smart cities. It harnesses real-time inputs from distributed IoT sensors that monitor voltage, current, temperature, and equipment health, alongside environmental and contextual data such as weather conditions and urban events. By applying advanced machine learning algorithms, the system fuses these diverse data streams to forecast potential faults, optimize load distribution, and proactively mitigate outages. Edge processing units conduct localized analytics, anomaly detection, and data anonymization, ensuring privacy protection while reducing latency. The platform provides transparent alerts and adaptive recommendations through operator dashboards and automated notifications, empowering timely and informed interventions. With a scalable and modular architecture, the system integrates seamlessly with existing urban infrastructure and renewable energy sources, strengthening grid reliability, efficiency, and resilience.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132714 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A GEOMETRIC ATTACHMENT MAPPING MODEL (GAMM) FOR ASSESSMENT AND QUANTIFICATION OF ATTACHMENT STYLES

(51) International classification	:A61B 5/16, G16H 20/70, G06F 19/00, A61B 5/00, G16H 50/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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5)Mohit Kumar

(57) Abstract :
The present invention relates to a geometric attachment mapping model (GAMM) for assessment and quantification of attachment styles. The invention relates to the field of computational psychology for evaluating attachment styles. It advances existing knowledge by introducing a geometric framework that maps attachment dimensions (anxiety, avoidance) onto coordinate axes, quantifying styles via properties like distances and areas. Principal use includes mental health assessment, therapy planning, and relationship counseling, enabling objective scores without speculative applications.

No. of Pages : 9 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/12/2025
(21) Application No.202511132722 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FIBRE-REINFORCED POLYPROPYLENE SYNTHETIC PAPER AND METHOD THEREOF

(51) International classification	:B32B 5/26, B32B 27/32, B32B 27/12, C08J 5/04, B32B 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Vidhu Gupta

(57) Abstract :
The present invention relates to a fibre-reinforced polypropylene synthetic paper (100) comprising at least one polypropylene layer (102, 104) and a fibre-containing composite layer (106) incorporating synthetic fibres (108) and a thermoplastic binder (110). During manufacture, the binder (110) undergoes melt-phase flow and wetting around the fibres (108) to form fibre-anchoring regions (112) that secure the fibres within and across the polypropylene layers (102, 104). This melt-flow interaction promotes polymer-chain interdiffusion and interfacial adhesion between the binder (110) and the polypropylene material, thereby consolidating the structure into a unified, non-laminated composite sheet (100) with fibres embedded in a continuous polypropylene matrix. The invention further provides a method (200) including forming polypropylene layers, preparing the fibre-containing composite layer (106), and inducing binder melting, generating anchoring regions (112), and cooling to obtain the consolidated synthetic paper (100). FIG. 1A

No. of Pages : 38 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/12/2025
(21) Application No.202511132730 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PRIVACY-PRESERVING FEDERATED LEARNING FRAMEWORK FOR CYBER RESILIENCE IN DISTRIBUTED MOBILE EDGE NETWORKS

(51) International classification	:G06N 20/00, H04L 29/06, G06F 21/55, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Dr. Sanjeev Thakur
3)Dr. Anchal Garg

(57) Abstract :
[039] The present invention discloses a federated learning-based cyber resilience framework for distributed mobile edge networks, designed to enhance threat detection and response while preserving user privacy. The system enables edge devices to locally train machine learning models on sensitive data without sharing raw information, leveraging differential privacy and secure aggregation techniques to construct a robust global model. An adversarial mitigation module filters malicious or poisoned updates, ensuring model integrity. Additionally, a decentralized threat intelligence protocol allows devices to share abstracted indicators of compromise, enabling proactive defense across the network. The invention supports dynamic device participation, is scalable, and can be applied to a variety of edge computing environments, offering an intelligent, adaptive, and privacy-preserving cybersecurity solution.
Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202511132736 A
(19) INDIA
(22) Date of filing of Application :28/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : Adaptive Expiratory Muscle Conditioning Device for Management of Radiation-Induced Swallowing and Airway Protection Disorders

(51) International classification	:A61M 16/00, A61F 5/56, A61M 16/06, A61M 16/20, A63B 23/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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9)Dr Preety Kumari
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(57) Abstract :
The present invention relates to an adaptive expiratory muscle conditioning device intended for rehabilitation of radiation-induced swallowing and airway protection disorders in patients treated for head and neck cancers. Radiation therapy commonly leads to expiratory muscle weakness, impaired cough, reduced subglottic pressure, and increased aspiration risk. The disclosed device comprises a soft medical-grade mouth interface, a micro-adjustable expiratory resistance module, a pressure-regulating safety valve, an aspiration-control chamber preventing saliva backflow, and a detachable hygiene filter. During use, controlled expiratory resistance is generated during forceful exhalation to strengthen expiratory musculature, enhance cough efficiency, and support airway clearance and protection during swallowing. Unlike conventional expiratory muscle strength training devices with fixed resistance levels, the present invention enables individualized and progressive resistance suitable for post-radiation tissue sensitivity. The device is non-invasive, mechanically operated without electronics, and suitable for supervised clinical use as well as structured home-based respiratory and swallowing rehabilitation programs.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132308 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PATIENT IMMOBILIZATION SYSTEM FOR MRI AND CT SCANNING

(51) International classification	:A61B 6/04, A61B 6/03, A61B 5/055, A61B 6/00, G01R 33/28
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Lalit Kumar Gupta
3)Vibha Sharma
4)Anudeep Kaur Sidhu
5)Puneet Sudan

(57) Abstract :
A patient immobilization system for MRI and CT scanning, comprises of a laying mattress 101 placed over a MRI/CT scanning bed, a plurality of suction patches 102 to prevent slipping of the mattress 101, a pair of sliding rails 103 supporting adjustable vertical flaps for patient posture alignment, an imaging unit 105 mounted via a link 106 on the mattress 101 for detecting patient size and posture, an inflatable tube 107 connected to the flaps 104 for gentle controlled body support, a toggle-link arrangement 108 for real-time alignment of the flaps 104, a multi-segment C-shaped cage frame 109 adjustable via hinge joints 110 to permit patient access, a spherical Birdcage Coil frame 111 to restrict head motion and maintain imaging alignment, an articulated arm 112 with clamping unit 113 for limb stabilization, an immobilization belt 115 to secure the patient, and an alert module for transmitting real-time alerts.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132309 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED BIO-CHAR PRODUCTION AND APPLICATION SYSTEM

(51) International classification	:B09B 3/00, C10B 53/00, B09B 5/00, C10B 53/02, C10B 53/07
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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4)Bharat
5)Sayra Saini
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(57) Abstract :
An automated bio-char production and application system, comprising of a framework 101 configured with a collection chamber 102 to receive and store agricultural raw waste materials, an imaging unit 103 for identifying the type of waste, a conveyer belt assembly 104 transports the waste across the framework 101, a cutting chamber 105 regulates material feed and cutting length, a drying chamber 108 removes moisture from the material, a pyrolysis chamber 110 for creating and restoring oxygen-free atmosphere and providing heat, an RGB camera 114 monitors color and texture of the material and automatically adjust heating duration or intensity, a grinding unit 115 processes the carbonized material, a mixing chamber 118 for uniform blending of additives and bio-char, a bio-char storage chamber 123 maintain airtight and moisture-free environment, and an application assembly either directly dispense the bio-char or uniformly on the surface of the targeted area of the field.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133362 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Motorized Smart-Textile Nursing Flap with Concealed Motor and Silicone Comfort Layer for Discreet Public Breastfeeding

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a motor-assisted smart-textile nursing garment designed to provide discreet, rapid, and hands-free breastfeeding access in public environments. The smart-textile nursing flap comprises a flexible, ergonomically shaped privacy flap actuated by a compact micro-motor mechanism embedded within the garment structure. To ensure user comfort and safety, the motor and mechanical components are fully encapsulated beneath a soft silicone or comparable elastomeric layer, preventing localized pressure, skin irritation, or mechanical exposure. Activation is achieved through a low-profile concealed button or optional touch-sensor interface that deploys the flap smoothly and quietly, enabling immediate coverage without manual adjustment. The detachable electronic module allows washing and maintenance without compromising garment integrity. By combining smart-textile engineering, soft-material cushioning, and controlled actuation, the invention delivers an advanced, user-centric solution that enhances privacy, comfort, and confidence for nursing individuals in public settings.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025

(21) Application No.202511132957 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Method for Image Scrambling To Enhance Image Security Using Image Partitioning and Genetic Algorithm Processing

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a method for image scrambling to enhance image security using image partitioning and genetic algorithm processing. The method comprising the steps of- receiving an input image (IINPUT) of size (256 X 256); partitioning the image into four same size (128 X 128) image blocks named B1, B2, B3 and B4; generating a new image (INEW) from these four image blocks using preferred logic; and applying a genetic algorithm to increase pixel gap between nearby pixel pairs and generate the good quality of scrambled image. The present invention enhances image data security during transmission over the internet.

No. of Pages : 9 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511132958 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR A FLUSH-CLOSING FOLDABLE SOLAR PANEL ASSEMBLY WITH INTEGRATED WIRING AND AN ASYMMETRIC HINGE MECHANISM

(51) International classification	:H02S30/20, H02S30/10, F24S20/20, F24S20/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to a foldable solar panel assembly comprising an n×n array of rigid, monolithic, parallelogram-shaped panels, each featuring integrated wiring channels and recessed mounting slots for photovoltaic modules and configured with an asymmetric hinge mechanism utilizing knuckle barrel hinges with variable offsets along a first axis and uniform offsets along a second axis. Additionally, the assembly may include an actuation mechanism providing a single degree of freedom to transition between deployed and folded states. The panels are manufactured via additive methods or injection molding, ensuring the integrated channels, mounting slots, and protrusions are formed as a monolithic unit. The system maintains electrical interconnections through wiring routed via the channels, enabling efficient and compact deployment and retraction of the solar module array.

No. of Pages : 27 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511132968 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Dual-passivation Gradient Interface Layer For Suppression Of Interfacial Trap States In Perovskite Photovoltaic Devices

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Shaiqa Nasreen

(57) Abstract :
The present invention relates to a perovskite photovoltaic device comprising a dual-passivation gradient interface layer disposed between a perovskite absorber layer and an adjacent charge-transport layer. The interface layer includes a controlled spatial gradient of ionic passivation agents and molecular passivation agents, wherein an ionic-rich region is positioned proximal to the perovskite absorber layer for suppression of shallow trap states, and a molecular-rich region is positioned toward the charge-transport layer for suppression of deep trap states. The graded architecture establishes a continuous chemical and energetic transition across the interface, thereby reducing interfacial recombination and ion migration while improving charge carrier extraction and operational stability. The interface layer is compatible with solution-processed and vapor-deposited fabrication techniques and can be integrated into single-junction perovskite solar cells, tandem photovoltaic devices, and hybrid photovoltaic arc

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133032 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A System and Method for Real-Time Speaker Recognition Using Hybrid MFCC–LPC Feature Extraction

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a system and method for real-time speaker recognition using hybrid MFCC–LPC feature extraction. The system comprises an audio input unit that receives configured to speech signals; a feature extraction module configured to combines the Mel Frequency Cepstral Coefficient (MFCC) and Linear Predictive Coding (LPC) parameters in order to create a hybrid feature vector; a classification module trained to classify or differentiate between the speaker profiles as authorised or unauthorised; and a decision-making module operating under real-time constraints using machine learning technology; wherein he decision-making module processes the extracted hybrid feature vectors and produces a binary classification result. Further, an embedded controller is set up to initiate a physical output in response to the classification outcome and is connected to the decision-making module through a processing and control unit. The system offers deterministic response times that are appropriate for embedded and low power applications and runs independently of external servers. For the purpose of security, automation and voice-controlled interface applications, the proposed architecture allows for a smaller, effective and lower latency speaker verification.

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132499 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : High-Fidelity via Metaheuristic Optimization and Convolutional Block Attention-Powered Residual Neural Architecture Pepper Leaf Disease Recognition System

(51) International classification	:G06T 5/40, G06N 3/08, G06V 10/764, G06N 3/04, G06V 10/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
This work utilizes a novel hybrid deep learning model for pepper leaf disease detection based on an attention mechanism and metaheuristic optimization. The system uses a Grey Wolf Optimizer (GWO) to optimize Contrast Limited Adaptive Histogram Equalization (CLAHE) parameters for better image enhancement and to enhance the Contrast of the image by enhancing the visibility of lesions and suppressing the noise. To selectively focus on “what and where” to attend in both channel and spatial dimensions, we propose a Convolutional Block Attention Module (CBAM) which is integrated into a typical Residual Neural Network-50 (ResNet50) and effectively attends to disease-responsible patterns while suppressing the background clutter. The solution is ideal for real-time, scalable use on low-power devices enabling early-stage disease detection and scalable agricultural monitoring.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132508 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART ROBOTIC IRONING SYSTEM WITH INTEGRATED CLOTH DETECTION AND AUTOMATED PRESSING MECHANISM

(51) International classification	:D06F 73/00, D06F 71/34, D06C 15/00, D06C 15/10, D06F 73/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a smart robotic ironing system capable of autonomously performing garment pressing through integrated fabric detection, adaptive heat regulation, and robotic movement. The system includes a fabric detection module employing infrared, optical, thermal, or capacitive sensors to classify cloth types and determine appropriate ironing parameters. A microcontroller processes sensor data and dynamically controls a robotic pressing mechanism comprising a heated plate, motorized arm, or roller assembly for uniform wrinkle removal. Temperature and pressure are adjusted in real time based on fabric sensitivity, while a multi-sensor safety subsystem incorporating pressure, motion, thermal, and contact sensors prevents overheating, obstruction, or fabric damage. The system initiates ironing at a minimal temperature, increases heat after fabric identification, and completes pressing through optimized paths. An optional mobile application enables configuration, monitoring, and firmware updates. The invention provides a compact, intelligent, and fully automated garment-care solution for domestic and commercial use.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025

(21) Application No.202511132509 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MULTIFUNCTIONAL STREETLIGHT SYSTEM POWERED BY RENEWABLE ENERGY

(51) International classification	:F21S9/03, F21S9/04, F21W131/103, H05B47/00, B60L53/00, G08B17/00, G08B21/00, G08B25/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The invention discloses a Multifunctional Streetlight System operating on the Law of Conservation of Energy. A multifunctional streetlight system powered by renewable energy, the system comprising: a solar energy harvesting module; a wind energy harvesting module; a rechargeable battery configured to store electrical energy generated from the solar and wind modules; a charge controller for regulating charging and discharging cycles; an LED lighting unit powered by the stored electrical energy; a plurality of sensors including accident-detection sensors, fire-detection sensors, and environmental pollutant-detection sensors; a communication module comprising GSM and GPS units; an Internet of Things (IoT) processing unit; and a bidirectional power conversion unit enabling electric vehicle (EV) charging; wherein all components are integrated to operate in accordance with the Law of Conservation of Energy to provide illumination, public-safety functions, environmental monitoring, and EV charging using renewable-energy-based power.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132525 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HUMAN SAFETY IN A HAZARDOUS AREA

(51) International classification	:G08B 21/10, G01W 1/02, G01W 1/10, G08B 21/02, H04W 4/029
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)ASHISH SHARMA
3)RINKU SHARMA

(57) Abstract :
The present invention discloses an intelligent smartwatch-based human-safety system designed to monitor hazardous environmental conditions and provide real-time alerts for users in high-risk regions. The device integrates rainfall, temperature, terrain-tilt, water-flow, pressure, and rip-current sensors controlled through an Arduino–ESP32 microcontroller architecture. Upon detecting danger thresholds, the system triggers an immediate audible and visual alarm, transmits SOS alerts with GPS coordinates to authorities, and provides navigation guidance toward the nearest safe location. Additional features include voice-note transmission, gesture-based safety status updates, long-range wireless communication via LoRa, and adaptive monitoring modes based on user location. The smartwatch operates with power-optimized mechanisms and a rugged, waterproof design suitable for extreme environments.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132527 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BIODEGRADABLE DRONE WINGS WITH SELF-DISPOSAL AND ENVIRONMENTAL NEUTRALIZATION MECHANISM

(51) International classification	:B64C 39/02, B64C 3/56, B64C 3/00, B64D 45/00, B64C 3/38
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Siddharth Arora

(57) Abstract :
The invention relates to a biodegradable drone wing system 200 incorporating a controlled self-disposal mechanism to eliminate long-term environmental impact when UAV recovery is not possible. The wing structure 303 is formed from flight-grade biodegradable composite materials 201 and integrates embedded degradation triggers, including enzyme-containing microcapsules and dissolvable joints 203,404. A protective barrier ensures structural integrity during flight by preventing premature activation. A disposal control unit 304 monitors operational and environmental conditions and authorizes disposal based on remote command, mission-time expiry, impact detection or environmental exposure. A detachable electronics module protects non-biodegradable components for retrieval. Upon activation, the wing undergoes controlled fragmentation and biodegradation, producing non-toxic and optionally ecosystem-beneficial residues. The invention provides a reliable, scalable, and environmentally responsible alternative to conventional UAV wings.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132528 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMARTPHONE DISPLAY SCREEN SYSTEM WITH SMUDGE-RESISTANT, ANTIMICROBIAL, AND ANTI-GLARE FEATURES

(51) International classification	:H04M 1/02, H04M 1/725, G06F 3/041, H04M 1/18, G02B 1/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Aakriti Chambial
2)Poonam Saini
3)Dr. Himanshu Sharma

(57) Abstract :
The present invention relates to a smartphone display screen system with smudge-resistant, antimicrobial, and anti-glare features designed to introduce a tri-functional smartphone screen that integrates anti-smudge, antimicrobial, and anti-reflective properties into a single, durable coating designed to enhance hygiene, clarity, and sunlight readability. This multifunctional system combines three bio-inspired layers: a lotus leaf-inspired top layer that repels oils, fingerprints, and water to maintain a clean surface and smooth touch responsiveness; a middle antimicrobial film embedded with copper nanoparticles that delivers broad-spectrum, long-lasting microbial protection; and a bottom moth-eye nanostructured layer that reduces glare and enhances visibility under bright sunlight without additional power consumption. Although each of these technologies exists independently, their integration into one cohesive coating creates a self-cleaning, multifunctional screen that surpasses conventional solutions such as silver-ion coatings, matte films, and oleophobic layers.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133184 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GEOPOLYMER MORTAR COMPOSITION AND PREPARATION METHOD THEREOF

(51) International classification	:C04B18/08, C04B18/10, C04B14/06, C04B14/04, C04B14/36, C04B16/04, C04B18/04, C04B18/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Rita Sharma
3)Shalom Akhai
4)Ramica Sharma
5)Abhineet Chauhan
6)Gurpreet Kaur

(57) Abstract :
A geopolymer mortar composition comprising a binder consisting of rice husk ash (RHA) and fly ash (FA), with the ratio of rice husk ash to fly ash, an alkaline activator solution comprising sodium hydroxide (NaOH) and sodium silicate (Na2SiO3), river sand, and a superplasticizer. A method for preparation of geopolymer mortar composition including sieving rice husk ash and fly ash to 45 μm and mixing to obtain a binder, preparing an alkaline activator solution of NaOH and Na2SiO3, mixing the binder, alkaline activator solution, sand, and superplasticizer to obtain a uniform mixture, casting the mixture into molds, and curing at 50-70°C for 22-26 hours followed by ambient aging to obtain hardened geopolymer mortar which exhibits compressive strength, thermal conductivity, and acid mass loss less than 8 % after 12 weeks of immersion in 5 % HCl.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133185 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HUMAN SCREENING AND HAZARD DETECTION WITH SMART WALKWAY SEGREGATION SYSTEM

(51) International classification	:D21D 5/12, D21D 5/14, A47K 3/34, A47K 3/36, A47G 5/04	(71)**Name of Applicant :** **1)Rayat Bahra University** Address of Applicant :Chandigarh-Ropar NH 205, Greater Mohali, Punjab – 140103, India. Greater Mohali Punjab India **2)Bahra University** **3)Rayat Bahra Professional University, Hoshiarpur**
(31) Priority Document No	:NA	(72)**Name of Inventor :**
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(33) Name of priority country	:NA	**2)Sonakshi Sharma**
(86) International Application No Filing Date	: :01/01/1900	**3)Gaurav Katoch** **4)Anju Goyal**
(87) International Publication No	: NA	**5)Vaishali Sharma**
(61) Patent of Addition to Application Number Filing Date	:NA :NA	**6)Muskan Devi**
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
A human screening and hazard detection with smart walkway segregation system, comprises of a moving walkway 101 constructed of discrete standing sections, each section integrated with vertical railings 102, a plurality of sensors to conduct vertical top-to-bottom inspection of a person stepping onto a section of the walkway 101, a lateral segregation arrangement designed for automatic removal of flagged individuals from the walkway 101, a luggage screening arrangement includes a conveyor belt 106 integrated an X-ray scanner 107, a millimeter-wave belt scanner 108, and a hazard-detection camera 109 to ensure person-and-baggage hazard assessment, a secure weapon-and-equipment authorization module for security personnel, a central command 110 houses the autonomous decision and coordination engine for synchronized people-flow, threat isolation, and operator alerts.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133186 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EMOTIONAL WELLNESS MONITORING DEVICE

(51) International classification	:G06F 1/3215, G21C 17/02, B60T 17/18, B60T 17/22, G06F 21/84
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Rayat Bahra Professional University, Hoshiarpur
(72)**Name of Inventor :**
1)Damanpreet Kaur
2)Puneet Sudan
3)Pushpender Sharma
4)Rupinder Kaur

(57) Abstract :
An emotional wellness monitoring device comprises of a wristband body 201 configured to be worn on the wrist of an adolescent, a plurality of sensors 101 integrated with the wristband body 201 to monitor adolescent's physiological and behavioral states in real time, a 360-degree rotatable AI camera 103 integrated with the wristband body 201, the camera 103 configured to monitor the adolescent's behavior, activity, and facial expressions, an array of microphones 104 integrated with the wristband configured for voice capture and analysis, a machine learning module integrated with an embedded microcontroller operatively coupled with the band configured to analyze real-time physiological and behavioral data and provide feedback and interventions to restore emotional balance and improve focus, delivered via a speaker 102 mounted on the body 201, a holographic projection unit 105 integrated with the wristband and configured to provide guided breathing exercises, motivational prompts, and interactive visual activities.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133187 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEATHER ADAPTIVE SAFE EGRESS SYSTEM FOR VEHICLES

(51) International classification	:B63C 7/30, E05G 1/00, B41L 35/34, B02C 23/16, G06Q 20/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Ravneet Kaur
2)Rupinder Kaur
3)Poonam
4)Raibarinder Singh

(57) Abstract :
A weather adaptive safe egress system for vehicles, comprises of a carrier frame 101, a camera 103 mounted on an extendable arm 104 with a motorized gimbal head at a center of the carrier frame 101 for providing 360-degree monitoring of occupants entering or exiting the vehicle and surrounding environment, a plurality of radar-based sensor for detecting occupant movement toward doors, a rain protection arrangement to protect the occupant(s) from rain, a retractable stepway arrangement to a safe pathway for occupants stepping out of the vehicle over slippery or water-accumulated surfaces, a plurality of compartments 111 for storing specific amounts of corrective material, the compartments 112 integrated with motorized iris holes for controlled release of the materials, a suction pump 112 with motorized conduits 113 and a storage chamber to remove accumulated safe water from the vicinity of vehicle doors.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132510 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IoT-ENABLED ACCIDENT DETECTION, PREVENTION, AND SECURE EMERGENCY RESPONSE SYSTEM

(51) International classification	:G06Q 40/08, A61B 5/00, A61B 5/0205, H04L 9/32, H04W 4/029
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Sachin Chawla

(57) Abstract :
The invention provides an intelligent accident prevention, detection, and emergency response system using a hybrid edge-cloud architecture. The system integrates vehicle motion sensors, environmental proximity detectors, and advanced biometric modules including ECG, SpO_2, blood pressure sensing, and fatigue detection to continuously assess vehicle conditions and driver health. Real-time AI at the edge predicts accident risk and initiates preventive actions such as alerts, adaptive speed control, and V2V/V2I warnings. Upon collision confirmation through multisensor fusion, the system automatically transmits encrypted emergency alerts containing location, severity, and driver vitals to authorized services. A blockchain-based ledger securely records event data for insurance and legal authentication. Communication is supported through multi-channel networks including 5G, DSRC, NB-IoT, GSM, and satellite fallback. A solar-assisted power system ensures continued operation during and after impact. The invention is scalable for private, commercial, and autonomous transportation systems.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202511132511 A
(19) INDIA
(22) Date of filing of Application :27/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : UNIVERSAL INTELLIGENT CHARGING MODULATION SYSTEM

(51) International classification :H02J7/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(72)**Name of Inventor :**
1)Dr. Balaka Biswas
2)Akshdeep Singh
3)Akashdeep Singh
4)Ms. Meenakshi
5)Dr. Bimal Raj Dutta

(57) Abstract :
The present invention relates to a Universal Intelligent Charging Modulation System designed to significantly extend the lifespan of lithium-ion batteries used in consumer electronic devices. The system comprises a microcontroller-based inline module capable of interfacing with multiple charging standards, including USB-C, Lightning, Qi wireless, and proprietary fast-charging protocols. A high-speed power regulation stage employing microsecond-level switching dynamically modulates charging voltage and current based on real-time electrical and thermal measurements. An integrated artificial intelligence algorithm continuously learns user charging habits, battery behaviour, and environmental conditions to generate adaptive charging curves that minimize lithium plating, thermal stress, and long-term degradation without compromising charging speed. The system further incorporates hardware-based fail-safe mechanisms to ensure over-voltage, over-current, short-circuit, and thermal protection in compliance with OEM safety limits. Implemented as a retrofit dongle, wireless pad add-on, or embedded chip, the invention provides a universal, manufacturer-independent solution applicable to smartphones, laptops, drones, wearables, and portable electronics.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132512 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT QUERY PROCESSING WITH AGENT-BASED RETRIEVAL-AUGMENTED GENERATION IN LLM FRAMEWORKS

(51) International classification	:G06N 5/04, G06N 5/02, G06F 16/33, G06F 16/332, G06F 16/2457
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Deepti Sharma
3)Bhavna Nayyer
4)Rubbina

(57) Abstract :
The present invention provides an intelligent multi-agent information-processing system integrating a Large Language Model (LLM)–based orchestrator with specialized autonomous agents to achieve high-accuracy retrieval-augmented generation. The orchestrator interprets user queries, allocates subtasks to decomposition, retrieval, ranking, synthesis, and verification agents, and manages iterative communication among them. A hybrid retrieval engine combines dense vector search with keyword-based search, while a multi-pass validation module filters hallucinations through cross-source and rule-based checks. The system incorporates short-term and long-term memory structures to retain context and prior reasoning patterns. The associated method enables adaptive query parsing, dynamic agent routing, fused result ranking, and explainable response generation. This architecture enhances accuracy, consistency, and transparency across complex information domains such as legal research, enterprise knowledge systems, technical support, and healthcare informatics.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132529 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI POWERED ADAPTIVE SECURITY SYSTEM WITH INTELLIGENT RANDOMIZED PATHWAYS

(51) International classification	:G06N 3/04, G06N 3/08, G06F 21/55, H04L 29/06, G06F 21/57
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Shubneet
3)Anushka Raj Yadav
4)Navjot Singh Talwandi

(57) Abstract :
The present invention relates to an AI-powered adaptive security system with intelligent randomized pathways for leveraging dynamic deep learning architectures combined with randomized activation pathways to autonomously detect and counter evolving cyber threats. This system employs a self-modifying neural network capable of mutating its internal architecture at runtime, thereby creating inherent unpredictability and strong resistance to adversarial attacks. Incoming data is processed through stochastic activation sequences, ensuring that each inference follows a unique internal pathway that cannot be replicated or reverse-engineered. The firewall integrates real-time threat detection, adaptive decision-making, and on-the-fly reconfiguration, enabling rapid autonomous responses to emerging attack vectors. Engineered for seamless deployment across edge devices, cloud infrastructures, and enterprise environments, the invention delivers high detection accuracy with minimal service disruption and low false positive rates.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132530 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART INCLUSIVE VIDEO INTERCOM SYSTEM WITH AI-BASED FACIAL, VOICE AND SIGN RECOGNITION

(51) International classification	:H04N 7/14, G10L 15/22, H04N 7/18, G10L 15/26, G06F 3/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Er. Alok Das
6)Er. Prince Pal Singh

(57) Abstract :
The present invention introduces a Smart Inclusive Video Intercom System that enhances secure, intelligent, and accessible communication through the use of advanced artificial intelligence. The system integrates facial recognition, voice recognition, and real-time sign language interpretation to identify, authenticate, and support users, including individuals with hearing, speech, or mobility impairments. It features multilingual voice processing and language-independent gesture recognition, enabling seamless interaction across diverse linguistic and ability groups. Equipped with a high-resolution camera, microphone, speaker, and embedded AI modules, the device provides multimodal communication at residential entrances, hospital bedsides, care facilities, and smart living environments. Real-time translation, gesture-to-speech conversion, mobile alerts, and smart logging further improve safety and user experience. Its modular, retrofit-friendly architecture ensures broad applicability, promoting inclusive, independent, and secure communication for all users.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025

(21) Application No.202511132541 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN FRAMEWORK FOR ASSESSING MATHEMATICAL APTITUDE AND ENGLISH PROFICIENCY TO IMPROVE CAREER RECOMMENDATIONS IN HIGHER EDUCATION

(51) International classification	:G09B 19/00, G06Q 50/20, G09B 7/02, G09B 19/06, G09B 7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to the development of AI-based system is built to assess both math skills and English proficiency, helping to provide better career advice for students in higher education. It uses machine learning and natural language processing to evaluate students' strengths and weaknesses through adaptive tests, as well as analyzing their written and numerical responses. By tying these assessments into career guidance algorithms, the framework offers tailored recommendations that match individual skills and interests. This method overcomes the flaws of standard testing and one-size-fits-all counseling, giving a more flexible and data-driven approach to career planning. Early results show that it significantly improves the accuracy of predicting fitting career paths based on a thorough evaluation of language and quantitative skills. With this system, students, educators, and advisors can make more informed decisions, leading to better academic and professional results. Overall, this AI-driven model marks a notable step forward in educational technology, merging cognitive assessment with career guidance to help higher education institutions better support their students and align career paths with changing industry needs. FIG.1

No. of Pages : 13 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/12/2025
(21) Application No.202511132767 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GEOPOLYMER-BASED HIGH THERMAL MASS WALL WITH LOW CONDUCTIVITY OUTER SHELL

(51) International classification	:C04B 28/00, C04B 38/02, C04B 40/02, C04B 38/00, C04B 40/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)Suhail Ahmad Ahanger
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2)Suhail Ahmad Ahanger

(57) Abstract :
The present invention relates to a geopolymer-based high thermal mass wall system configured for passive thermal energy storage and controlled heat release. The wall system comprises an inner geopolymer structural core formed from aluminosilicate precursor materials activated by an alkaline activator system, providing both load-bearing capability and high thermal energy storage capacity. A low thermal conductivity outer shell is disposed adjacent to the geopolymer core to restrict heat transfer and regulate thermal exchange with the external environment. The outer shell may comprise an aerated geopolymer composite, a foamed ceramic or lightweight geopolymer matrix, or a bio-based insulation panel. An interface bonding layer ensures structural continuity between the core and the insulation shell, and an optional reinforcement layer may be provided for enhanced mechanical performance. The wall system operates entirely through passive thermal mechanisms and is suitable for cast-in-place, precast, or modular construction. The invention provides an energy-efficient, low-carbon wall solution for improved indoor thermal comfort.

No. of Pages : 31 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/12/2025
(21) Application No.202511132768 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Hollow Brick Wall System Filled with Recyclable Heat-Storage Granules

(51) International classification	:E04B 2/02, E04C 1/40, E04C 1/41, F28D 20/02, E04B 2/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Suhail Ahmad Ahanger

(57) Abstract :
The present invention relates to a passive, energy-efficient hollow brick wall system designed to enhance thermal energy storage and heat retention in buildings. The system comprises modular hollow masonry bricks having one or more internal cavities filled with recyclable heat-storage granules selected from sensible heat materials, phase-change material pellets, composite capsules, or recycled industrial by-products. The granule-filled cavities increase the effective thermal mass of the wall, enabling absorption of thermal energy during periods of heat availability and gradual release of the stored heat over extended durations. The cavities are accessible through removable sealing means, allowing removal, replacement, or reconfiguration of the heat-storage granules for seasonal thermal performance tuning. The wall system operates without electrical, mechanical, or active control components and is compatible with conventional masonry construction practices. The invention reduces indoor temperature fluctuations, lowers heating energy demand, and supports sustainable construction through the use of recyclable and reusable materials, particularly in cold and temperate climatic regions.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/12/2025

(21) Application No.202511132769 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : RECIPROCATING CONVEYOR SYSTEM

(51) International classification	:B65G25/04, B65G25/00, B65G27/00, B65G25/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Rahul Vaishnav

(57) Abstract :
The present invention relates to a reciprocating conveyor system (100) for inline feeding and transverse material distribution using a mechanical drive is disclosed. The system (100) comprises a variable voltage and frequency drive-controlled motor (102) coupled to a gearbox (104), the output shaft (108) of which carries a tetrapod disc (106) having multiple radially spaced holes (110a-d) for selective stroke length adjustment. A tie rod (112) with a turnbuckle (114) and spherical pin hinges (116) converts rotary motion of the tetrapod disc (106) into linear reciprocating motion of a conveyor (300) mounted on wheels (not shown) running over rails (304). The system receives material from a narrow upstream conveyor and uniformly distributes it across a wider downstream conveyor (400). Unlike hydraulic oscillating systems, the invention eliminates temperature-sensitive oil circuits and valve malfunctions, reduces energy consumption and maintenance, and provides precise control over stroke length and stroke frequency, making it robust and suitable for dusty, heavy-duty industrial environments.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133188 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BASKETBALL TRAINING DEVICE

(51) International classification	:B61L 1/14, B61L 3/10, A63B 5/16, B61L 1/00, B61L 3/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Rayat Bahra Professional University, Hoshiarpur
(72)**Name of Inventor :**
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2)Abhineet Anand
3)Anudeep Kaur Sidhu
4)Poonam
5)Parina

(57) Abstract :
A basketball training device, comprising a body 101 having multiple motorized mecanum wheels 102, which are developed to autonomously navigate across a basketball training environment with precision and agility, a biometric secured chamber 103 arranged to store a wearable unit 104, which is accessible only after biometric authentication via an integrated biometric scanner 105 located on an outer wall of the body 101, multiple physiological sensors 112, configured to continuously monitor heart rate, heart rate variability (HRV), exertion load, fatigue patterns, and other physiological variations of a player during training sessions, a monitoring module captures positional, postural, and ball-movement data of the player, a ball-handling assembly is provided on either side of the body 101 to facilitate dribbling, passing, scoring, and defensive maneuvers, a motorized scissor-lift platform 110 at the bottom of the body 101 enables raising or lowering the device in real-time based on training conditions.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133236 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-ORCHESTRATED DYNAMIC FULFILMENT SYSTEM AND METHOD FOR MULTI-VENDOR ORDER OPTIMIZATION

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Shashank Kamaljit Bhatia

(57) Abstract :
Embodiments disclosed herein relate to an AI-orchestrated system and method for adaptive coordination of multi-vendor order fulfilment. The system integrates heterogeneous user interfaces capable of receiving structured and unstructured order inputs. It processes them through an AI orchestration engine that generates a structured task graph of preparation, pickup, and delivery actions. Real-time vendor telemetry, capacity indicators, and courier movement signals are used to predict preparation and delivery timelines with high accuracy. A reinforcement-learning policy computes optimized dispatch schedules that minimize overall latency while balancing the dynamic workloads of vendors and couriers. A digital-twin simulator provides predictive modelling of kitchen operations, travel paths, and courier availability to support proactive scheduling decisions. A feedback module continuously updates model parameters based on differences between predicted and actual outcomes, enabling adaptive and privacy-preserving learning across heterogeneous vendor platforms. Embodiments thereby provide improved efficiency, reduced delivery time, and enhanced user and vendor coordination in multi-party fulfilment environments.

No. of Pages : 23 No. of Claims : 21

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133244 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PORTABLE HEATING DEVICE FOR CONTROLLING TEMPERATURE OF FLUIDS WITHIN CONTAINERS

(51) International classification	:G02B 21/30, B60H 1/00, C21D 9/677, H05B 1/00, A47C 21/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Jaikumar V
3)Vijay Kumar Turaga
4)Shivakumar Bhavi

(57) Abstract :
A portable heating device (104) and a container (102) for controlling the temperature of fluids within the container (102) are disclosed. The portable heating device (104) includes a first housing (202). The first housing (202) includes a replaceable heating element (208) configured to transfer heat to the fluid, a thermal spreader (210) positioned above the replaceable heating element (208) for uniform heat distribution and a thermal interface material positioned beneath the replaceable heating element (208). The portable heating device (104) includes a second housing (204) detachably coupled to the first housing (202). The second housing (204) includes at least one battery (212), a Printed Circuit Board (PCB) (214) and one or more ventilation slots (216) present on a periphery of second housing (204) to provide cooling to at least one battery (212) and the PCB (214). The portable heating device (104) includes a locking mechanism coupled to first housing (202). [To be published with FIG. 2]

No. of Pages : 25 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133363 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Multi- Purpose Detachable Scissors for Multi-Functional Fabric Cutting Applications

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Aanchal Trehan
2)Mahboob Anwer

(57) Abstract :
The present invention relates to a modular, detachable multi-purpose scissors specifically engineered for diverse fabric-cutting needs in fashion design, tailoring, and upholstery. The scissors consists of interchangeable blades and ergonomic detachable handles that allow users to switch between straight-cut blades, zig-zag blades, micro-serrated blades, and heavy-duty cutters without replacing the entire tool. The quick release locking mechanism enables safe attachment and detachment while maintaining cutting stability. This design reduces tool clutter, improves efficiency, and offers precision cutting for a wide variety of textiles and technical fabrics. The invention provides a cost-effective, versatile, and space-saving solution for students, designers, tailors, and industry professionals.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133364 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Military Jacket with 3D Origami Structural Compartments for Concealed Ammunition Storage

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Mahboob Anwer

(57) Abstract :
The present invention relates to a military jacket with 3D origami structural compartments for concealed ammunition storage. The present inventing is a specially engineered military jacket that integrates 3D origami-inspired geometric structures within the garment layers to securely conceal ammunition without compromising soldier mobility. The origami compartments distribute weight evenly, enhance camouflage by breaking the jacket's surface geometry, and provide rapid access to stored ammunition during combat. Unlike traditional jackets with bulky pockets, this garment conceals ammunition inside folded structural cavities, improving stealth, ergonomics, and safety. The combination of textile engineering and foldable structural geometry offers a compact, lightweight, and non-metallic storage solution ideal for modern warfare scenarios.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133366 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SPINAL MANUAL THERAPY COMBINED WITH MODIFIED RIGID TAPING FOR LUMBAR RADICULOPATHY TREATMENT

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Sharda Sharma
4)Sandeep Kumar
5)Surbhi Joshi
6)Pooja Bisht

(57) Abstract :
The present invention relates to a novel multimodal physiotherapy intervention combining Maitland's spinal mobilization techniques with modified rigid taping for treating lumbar radiculopathy. The method addresses nerve root compression through grade-specific posteroanterior vertebral pressures, rotational mobilizations, and longitudinal movements targeting the L5-S1 segment. Modified rigid taping applied from lumbar spine to gluteal region provides mechanical stabilization while allowing functional mobility. The intervention demonstrates efficacy in reducing pain intensity, improving lumbar range of motion, enhancing straight leg raise angles, and optimizing nerve conduction velocity. Clinical outcomes are measured using validated scales including Numeric Pain Rating Scale, Oswestry Disability Index, goniometric assessments, and nerve conduction studies. This comprehensive approach offers superior therapeutic outcomes compared to conventional physiotherapy alone, addressing both biomechanical dysfunction and neurophysiological impairment in patients aged 25-50 years with radiologically confirmed lumbar radiculopathy.

No. of Pages : 23 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132549 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VEHICLE SAFETY SYSTEM FOR DRIVER IMPAIRMENT DETECTION AND PRE-COLLISION IMPACT MITIGATION

(51) International classification	:B60W 50/14, B60W 40/08, B60K 28/06, B60W 30/095, B60R 21/0132
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)INKESH MAURYA
3)MOHD AZIM SIDDIQUI
4)ISHU CHAUDHRY
5)KAUSTUBH SHUKLA

(57) Abstract :
The present disclosure provides a vehicle safety system comprising a driver-condition sensing assembly including an eye-condition sensor and an alcohol sensing unit, an external-object sensing assembly, an impact sensing assembly, a braking actuation interface, a deployable energy-absorbing bumper assembly, and a controller operatively coupled thereto. The controller receives and analyzes eye-closure data and alcohol-condition data to determine a driver impairment condition and receives and analyzes proximity data to determine a collision-risk condition. Upon determination of at least one selected from the driver impairment condition and the collision-risk condition, braking force is applied through the braking actuation interface. Further, the deployable energy-absorbing bumper assembly is moved from a retracted position toward an extended position prior to collision occurrence to mitigate impact forces. Fig. 1 Dated December 26, 2025 Mungalpara Jigneshbhai Chhaganbhai IN/PA-2640 Agent for the Applicant

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132574 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOULEASE – A Smartwatch and App-Based Mental Well-Being Voice Assistance and Emergency Support System

(51) International classification	:A61B5/16, A61B5/00, G16H20/70, G08B21/02, G08B21/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Shivani Shukla
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8)Ruchika Rastogi
9)Harit Kumar

(57) Abstract :
SOULEASE is a smartwatch and mobile application-based system designed to provide assistance to any individual who feels emotional distress, anxiety, or a panic attack. The smartwatch keeps track of the user's heart rate, oxygen level, or other stress indicators continuously. When the device finds any abnormal readings, it impromptu comforts the user by the automatically playing of the pre-recorded voice messages of the loved ones. At the same time, it also goes on to the connected mobile app and thus, through this, the device sends an emergency alert along with the live location of the user to the contacts that have been selected beforehand. The mobile application also allows users to record voice messages, manage contacts, and access online therapy or mental health support whenever required. Combining emotional connections with smart technology, SOULEASE provides real-time solutions for mental wellness, covering both safety and emotional care in moments of crisis.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132577 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Auto White Board Wipers

(51) International classification	:B43L21/00, B43L1/00, B43L21/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Omika Bhalla Saluja
7)Deepti Sharma

(57) Abstract :
The current invention pertains to an Automatic Whiteboard Wiper intended for automating the whiteboard cleaning procedure in classrooms, offices, and meeting rooms. The device includes a motorized wiping system, a microcontroller-based controller, and sensors for monitoring writing marks or soiling on the board surface. The system functions under various modes, namely manual operation, sensor-driven automation, and scheduled cleaning through remote or mobile app. It ensures consistent and effective cleaning, minimizes manual labor, saves time, and ensures hygiene in high-usage spaces. The invention also includes additional features like wireless connectivity, rechargeable power, replaceable cleaning pads, and energy efficiency. Space-saving in design and compatible with various board sizes, the Automatic Whiteboard Wiper offers an economical, eco-friendly, and user-friendly solution for contemporary educational and professional environments.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511132789 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : THREE-STAGE CASCADE REFRIGERATION SYSTEM WITH PARALLEL CAPILLARY MANIFOLDS AND SPECIFIC EFRIGERANTS FOR ULTRA-LOW TEMPERATURES

(51) International classification	:F25B 7/00, F25B 41/04, F25B 9/00, F25B 1/10, F25B 41/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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5)Prakhar Jain
6)Mayank Bhadoria

(57) Abstract :
The present disclosure relates to a three-stage cascade vapor compression refrigeration system (100) capable of achieving evaporator (122) temperatures in the range of −55 °C to −65 °C. The system comprises a high-temperature circuit (102) charged with R32 refrigerant, a medium-temperature circuit (114) charged with R600a refrigerant, and a low-temperature circuit (120) charged with R290 refrigerant. Each circuit includes two parallel capillary tubes (110A, 110B; 116A, 116B; 124A, 124B) of predetermined dimensions, each fitted with a manual shut-off valve (112A, 112B; 118A, 118B; 126A, 126B) for selective configuration. Cascade heat exchangers CHX1 (108A) and CHX2 (108B) interconnect the circuits. Temperature sensors T1–T19 (130) and pressure sensors P3–P18 (132) are used to monitor performance, enabling optimisation of cascade temperature difference and compressor discharge temperatures. The disclosure may provide stable ultra-low temperature operation, improved COP, reduced system complexity, and operational flexibility for both industrial use and educational demonstration. Figure 1

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511132790 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SAHYOG Customizable Hi-Tech Augmentative and Alternative Communication Device

(51) International classification	:G09B 21/00, A61M 21/00, A61B 5/00, A61B 5/16, G09B 21/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Praanjal Raikwar
4)Mohd. Aftab
5)Sudhir Sangam
6)Atul Kumar Jha
7)Ashir Rehman

(57) Abstract :
Communication is a fundamental human need, yet many individuals with severe communication deficits face significant challenges in expressing their thoughts, needs, and emotions. Augmentative and Alternative Communication (AAC) systems offer a lifeline to nonverbal individuals and those with multiple disabilities, including deafness, autism, paralysis, dyslexia, and more. However, the existing AAC solutions in India are often costly and imported, limiting their accessibility. Our innovative Augmentative and Alternative Communication (AAC) device, aptly named SAHYOG, combination of hardware and software revolutionizes assistive technology by addressing the diverse needs of individuals with communication disabilities. SAHYOG's design embodies inclusivity and functionality, offering a comprehensive solution for effective communication and interaction so that the communication gap in specially abled lives can be bridged including enhancing the quality of life for users. It will be the first ever device in this AAC Technology that is going to be manufactured in India, as currently these devices are imported from foreign countries at very high cost.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025

(21) Application No.202511132818 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Lightweight Hierarchical Multi-Authority Attribute-Based Encryption System with Chaotic Authentication and Time-Controlled Re-Encryption for Secure Context-Aware Data Sharing in Fog Computing Environments

(51) International classification	:H04L 9/00, H04L 9/32, H04L 9/08, H04L 9/30, H04L 9/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Ms. Mankali Priyadarshini
2)Dr. Shanker Chandre

(57) Abstract :
[047] The present invention discloses a secure, scalable, and context-aware data sharing system designed for fog computing environments, particularly in resource-constrained and latency-sensitive domains. The system integrates a lightweight attribute-based encryption framework with a hierarchical multi-authority key management structure to enable fine-grained access control without reliance on computationally intensive cryptographic operations. A dual access policy mechanism is employed to evaluate both static user attributes and dynamic contextual conditions such as time, location, and device identity at the time of access. The invention further incorporates a chaotic group-based authentication mechanism using Chebyshev chaotic maps to provide lightweight and scalable user verification. Additionally, a time-controlled delegated re-encryption capability allows fog servers to autonomously update access policies and re-encrypt data based on predefined temporal conditions without data owner intervention. Collectively, the invention provides an efficient, adaptive, and secure framework for managing sensitive data in distributed fog and edge computing environments. Accompanied Drawing [FIG. 1]

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133374 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Dual-Modality IoT System for Real-Time Electricity and Water Monitoring with AI-Driven Conservation and Behavioral Feedback

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Virender

(57) Abstract :
The present invention relates to a Dual-Modality Internet of Things (IoT) System designed to enable both electricity and water consumption at the appliance level simultaneously and in real time within both home and commercial settings. The system comprises a plurality of sensors for capturing device-level electrical usage and faucet-level or outlet-level water flow metrics; AI engine which utilizes advanced correlation models to simultaneously analyze and optimize the relational dependency of electricity and water usage patterns versus non-dependent tracking methods; and a Gamified Behavioral Feedback Dashboard to facilitate live analysis into visible and practical action items to encourage infection in behaviors to conserve resources that highlight environmental impacts, provide community challenges, or provide real-time behavioral nudges to support immediate engagement in changing usage behaviors. The system additionally incorporates an Offline-Capable AI Module to maintain service seamlessly, enable ongoing anomaly detection, and deploy local steps for conservation action and fault-based control logic even if the internet goes down. This technology permits passive utility monitoring to become mature technology that is interactive, intelligent, and self-optimizing in the interest of resource sustainability.

No. of Pages : 21 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133376 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CozyConnect Cup: An Interactive Cup System for Remote Emotional Engagement

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Deeksha Ahuja
2)Ms. Akshita Singhal
3)Ms. Siddhi Agarwal

(57) Abstract :
The present invention relates to an interactive cup system for remote emotional engagement. The Cozy Connect Cup comprises a pair of mood-sensing smart mugs that are used for people who are busy all day or long distance relationships to stay emotionally connected while staying miles apart. The mug detects grip pressure, movement and skin temperature to analyse the user's mood or emotional state, conveying this through light or vibration to the connected mug. The mugs paired directly through Wi-fi. They are charged through portable USB. Cozy Connect Cup facilitates short "voice ripples" which allows emotional sound signals to be exchanged, developing new ways to share presence and care between users.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133394 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An AI-Powered Automated Mineral Detection and Nutrient Infusion System

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Chanchal Agrawal
2)Chirag Jotwani
3)Dr. Krishna Kant Pandey

(57) Abstract :
The present invention relates to an artificial-intelligence-enabled autonomous system for real-time mineral detection, soil-condition assessment, and precision nutrient infusion in agricultural environments. The system integrates a multi-parameter sensor array configured to capture soil moisture, pH, dissolved solids, temperature, humidity, and reservoir-level information, along with a dual-layer computational architecture comprising a high-level processing unit and a low-level microcontroller. The microcontroller performs continuous sensor-data acquisition and individualized calibration, while the high-level processor executes an ensemble-based machine-learning inference engine to generate predictive irrigation and nutrient-delivery directives. A secure communication interface facilitates bidirectional data exchange between the processing layers for closed-loop autonomous control. An actuator assembly executes precision-bounded fluid-dispensing operations in accordance with the predicted requirements. The system optionally integrates visual plant-health imaging and remote supervisory access for enhanced analytics and oversight. By dynamically adjusting irrigation and nutrient-infusion parameters based on evolving soil and environmental conditions, the invention provides self-modulating, resource-efficient, and crop-adaptive management of soil mineral balance and plant nourishment without requiring continuous human intervention.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132578 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOLVENT-BASED PMMA TRANSFER LACQUER COMPOSITION FOR PET FILMS

(51) International classification	:C09D 133/12, C08L 33/12, C09D 7/63, C09D 7/65, C09D 7/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)NEELAKAMAL MOHAPATRA
2)ANGSHUMAN MUKHERJEE

(57) Abstract :
The present disclosure relates to a solvent-based polymethyl methacrylate (PMMA) transfer lacquer composition suitable for application on polyethylene terephthalate (PET) films and subsequent transfer to secondary substrates. The composition comprises 45% to 50% by weight of polymethyl methacrylate (PMMA) as a film-forming component, and a multi-solvent system (44% to 60% by weight) comprising an aromatic hydrocarbon solvent, an ester solvent, a glycol ether solvent, and a ketone solvent. The composition further comprises functional additives (2% to 8% by weight) including a wetting agent, a release agent, a co-polymer modifier, and a levelling agent. The disclosed composition forms a uniform coating on PET films and enables controlled transfer to secondary substrates under heat or pressure with minimal residue on the PET carrier film. The composition is suitable for decorative transfer, packaging, embossing, metallization, and industrial lamination applications and is compatible with commercial coating processes.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132579 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD AND SYSTEM FOR SEQUENCE-INDEPENDENT DECOMPOSITION OF POWERED FINITE SUMMATIONS USING FORWARD-DIFFERENCE HIERARCHIES

(51) International classification	:G06F 17/10, G06F 7/38, G06F 17/17, G06F 7/544, G06F 17/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)himanshu sharma
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(72)**Name of Inventor :**
1)himanshu sharma

(57) Abstract :
A method and system for computing powered finite summations using structured, hierarchical decomposition are disclosed. The invention operates on a finite input sequence and generates forward-difference coefficients that provide a compact structural representation of the sequence. A finite summation derived from the input sequence is decomposed into a plurality of hierarchical distortion components, each corresponding to a distinct order of structural interaction among the forward-difference coefficients. Each distortion component is computed independently using basic arithmetic operations and may be evaluated sequentially or in parallel. The independently computed components are aggregated to obtain the powered finite summation. When the input sequence is modified, only a limited subset of lower-order distortion components is recomputed, enabling efficient incremental updates without full recomputation . The disclosed framework provides exact computation for polynomial-type sequences and controlled approximation for general sequences through truncation of higher-order components. The method supports deterministic execution time and hardware-friendly implementation and may be realized in software, firmware, hardware circuits, embedded systems, or computer-readable storage media. The invention improves computational efficiency, scalability, and real-time suitability of powered finite summation evaluation across signal processing, numerical computation, data analytics, control systems, and related applications

No. of Pages : 20 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025

(21) Application No.202511132581 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Cykaara’s Holistic Period Wellness Kit

(51) International classification	:A61K 36/534, A61K 36/53, A61P 15/00, A61K 33/06, A61P 31/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)AmolikaTrivedi
4)Akshat Shukla
5)Aanvi Tiwari
6)Angela Shukla
7)Akhand Pratap Singh
8)Ananya Gupta
9)Priyanka Singh
10)Harit Kumar

(57) Abstract :
A Magnesium Infused Balm, an Herbal Period Comfort Digestive Powder, and a Novel Antifungal pHCalm Mist.Wedifferfrom thecompetition whichtackleperiodissuesoneat a time,wetakeawholebodyapproachtohealthcareofthemenstruatingperson.TheMagnesium Balm which contains magnesium chloride, beeswax, shea butter, coconut oil, lavender and peppermint essential oils puts out cramp relief by way of transdermal magnesium ion absorption.TheDigestivePowderisamixof8Ayurvedicherbs(Ajwain,Fennel,Jeera,Sonth, Pudina, Hing, Coriander, and Elaichi) we designed this to reduce acidity, bloating and gastric issues as well as to improve gut health which in turn improves hormonal balance. The AntifungalpHCalmMistisagreentea,neem,applecidervinegar,glycerine,turmericextract, and soothing botanicals like rose or chamomile-based water spray we present to you. This mist’s function is to prevent fungal growth, rashes, and irritation from pad use as it brings the skin back to its natural acid pH (4.5-5). We're proud to introduce the first hormone smart kit on the market. It's a complete, all-in-one system designed to support women's health by naturally relieving pain, improving digestion, and caring for your skin.This kit is portable, eco-friendly, and uses a science-based approach to empower you with a sustainable self-care routine.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133246 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART PLATE SYSTEM WITH INTEGRATED SENSORS FOR PORTION CONTROL AND FOOD WASTE REDUCTION

(51) International classification	:G06F 16/25, B65D 5/4805, H04W 12/10, G05B 19/418, H10F 39/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Upasana Dwivedy
2)Geeta Rani
3)Vijaypal Singh Dhaka

(57) Abstract :
The present disclosure discloses smart plate system with integrated sensors for portion control and food waste reduction (100) that enables real-time analysis of food characteristics and consumption behavior. The system comprises of plate body (102), load cell (104) for measuring serving weight, capacitive moisture and oil sensor (106), thermal sensor (108), optical/infrared sensor (110), and camera module (112) for capturing food geometry and visual attributes. An onboard processor (114) performs multi-sensor fusion, while a machine-learning module (116) generates adaptive nutritional insights and portion recommendations. A wireless communication module (118) enables transmission of processed data to external applications, and a wireless charging coil (120) supports inductive power replenishment. Reference Fig 1

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133248 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VERIFIABLE MENTAL HEALTH INTERVENTION SYSTEM WITH EDGE-SIGNED INTENT ACTIVATION AND CONSENT-GATED HYBRID THERAPY

(51) International classification	:G16H 50/30, B60W 50/14, H04M 3/51, H04M 3/527, G01S 19/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Kritika Dhanesh Magnani
2)Swastik Dutt
3)Archit Singh
4)Dr. Pooja Gupta

(57) Abstract :
The present invention relates to a verifiable mental-health intervention system for enabling secure, consent-controlled, and auditable delivery of mental-health assistance. The system comprises a user device configured to generate a cryptographically signed intent packet, an edge-based intent generator for embedding a nonce and digital signature, and a backend server configured to verify the signed intent and compute a runtime consent token defining access scope and permissions. A crisis detection module determines a mental-health risk state of a user, and a consent-scoped retrieval module retrieves encrypted user memory accordingly. An intervention orchestrator selectively initiates an artificial-intelligence–based intervention, a human-therapist intervention, or a hybrid therapy session based on the detected risk state and consent scope. The system further includes encrypted cloud storage for user journals and memory, a secure communication interface for therapist interaction, and a cryptographic audit mechanism that generates a Merkle-based audit record anchored to a distributed ledger, thereby ensuring tamper-proof and verifiable mental-health interventions . FIG. 1 is selected.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133256 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN EMBEDDED HYDRO-PRESSURE THERAPEUTIC SOCK FOR CIRCULATORY AND NEUROMUSCULAR RELAXATION

(51) International classification	:A41F 11/02, A61H 33/00, A61P 43/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Mr. Deepak Singh

(57) Abstract :
The present disclosure relates to an embedded hydro-pressure therapeutic sock for circulatory and neuromuscular relaxation (100). The invention comprises a therapeutic sock body (102) configured for daily wear, an embedded hydro-pressure chamber system (104) disposed within the sock body to apply localized compressive pressure, and a micro-fluidic channel network (106) fluidly connected to the chamber system for distributing hydro-pressure. A hydro-pressure generation mechanism (108) generates compressive and decompressive pressure through natural movement, manual actuation, or controlled pressure cycling, while a non-toxic pressure-transfer fluid or gel (110) transmits pressure within the system. Optional pressure sensing module (112) monitors hydro-pressure levels for feedback or pressure management. Optional user feedback modules comprises an audio feedback module (114) and a visual or projected indicator module (116). The integrated components deliver dynamic, localized hydro-pressure modulation without bulky external devices. Reference Fig 1

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133410 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Method and System for Enhancing Marketing Efficiency in Life Insurance Sector

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(72)**Name of Inventor :**
1)Dr Saurabh Sharma
2)Dr Shilpa Joshi

(57) Abstract :
The present invention relates to a well-structured and recapitulatory marketing-management process focusing on the life insurance sector. The process integrates customer analysis, segmentation, product development, test marketing, and marketing-mix optimization with focusing on customer satisfaction and new product development. The process begins with customer analysis based on segmentation, followed by product development and test marketing using quantitative and qualitative measures. Segmentation explains algorithmic classification of customer dataset considering demographic, behavioral & risk profile, geographical and personality trait factors. Further, a comprehensive new product development framework is deployed, incorporating idea screening, iterative prototype design, actuarial economic, financial and economic feasibility study, and controlled test marketing. Feedback from structured test marketing leads to focused marketing strategies. The invention provides an algorithm-based methodology that ensures a feedback-driven, product-market fit and controlled risk marketing management process for the life insurance sector.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133427 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : QUANTUM-ENHANCED SYSTEM AND METHOD FOR ACCELERATED POLYNOMIAL FACTORIZATION USING HYBRID CLASSICAL–QUANTUM COMPUTATION

(51) International classification	:F24T 50/00, B60T 13/72, B61L 27/02, B60T 13/46, H02S 10/30	(71)**Name of Applicant :** **1)Dr. Ajay Singh Yadav** Address of Applicant :Associate Professor, Department of Mathematics, SRM Institute of Science and Technology, Delhi-NCR Campus, Modinagar- 201204 Uttar Pradesh India **2)Dr. Radhika. M.** **3)Dr. T. V. L. Narayana** **4)Dr. Machhindranath M Dhane** **5)Ms. Adithya G S**
(31) Priority Document No	:NA	**6)Dr. M. Dhanalakshmi**
(32) Priority Date	:NA	**7)Dr. R. Premanand**
(33) Name of priority country	:NA	(72)**Name of Inventor :**
(86) International Application No Filing Date	: :01/01/1900	**1)Dr. Ajay Singh Yadav** **2)Dr. Radhika. M.**
(87) International Publication No	: NA	**3)Dr. T. V. L. Narayana**
(61) Patent of Addition to Application Number Filing Date	:NA :NA	**4)Dr. Machhindranath M Dhane** **5)Ms. Adithya G S**
(62) Divisional to Application Number Filing Date	:NA :NA	**6)Dr. M. Dhanalakshmi** **7)Dr. R. Premanand**

(57) Abstract :
[030] A quantum-enhanced system and method for accelerated polynomial factorization using a hybrid classical–quantum computational framework is disclosed. The invention receives polynomial expressions and performs classical preprocessing to normalize coefficients, analyze algebraic structure, and decompose the problem into quantum-suitable subcomponents. Polynomial parameters are encoded into quantum states and processed using quantum algorithms exploiting superposition, entanglement, amplitude amplification, and phase estimation to efficiently identify polynomial factors. Quantum measurement outputs are decoded and verified through classical symbolic computation to ensure correctness and reliability. The disclosed invention significantly reduces computational complexity for high-degree and multivariate polynomial factorization and is compatible with near-term quantum computing architectures, making it suitable for applications in cryptography, scientific computing, and advanced algebraic analysis. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133510 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR REAL-TIME BIDIRECTIONAL SIGN LANGUAGE COMMUNICATION AND CONVERSION

(51) International classification	:E21D 13/02, D21D 1/20, C21D 1/26, C21D 1/34, C12Q 1/6869
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)RISHABH GARG
3)SHREYA ARORA
4)DR. PRAKASH SRIVASTAVA

(57) Abstract :
A real-time system enables bidirectional conversion between sign language and spoken or written language by integrating an input capture module with a high-definition camera (1a) for continuous gesture capture, a computer vision and preprocessing unit (1b) for image enhancement and feature extraction, and a machine learning gesture recognition engine (1c) utilizing convolutional and recurrent neural networks to classify static and dynamic gestures. The system further comprises a text and speech synthesis module (1d) for audible speech generation, a speech and text input module (1e) with a natural language processing unit (1f) for structured representation formation, and a sign language rendering module (1g) featuring an animated avatar. A multilingual and translation manager (1h) supports various sign languages while a system integration controller (1i) coordinates all components, collectively facilitating seamless two-way communication.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133732 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MOBILE GADGET HOLDING DEVICE

(51) International classification	:A47K 1/05, A61M 25/02, A43D 25/08, A01K 83/06, B65H 3/54
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Neetu Mahendru

(57) Abstract :
A mobile gadget holding device, comprises of a holder 101 to support a mobile gadget, a pair of opposing slidable brackets 103 mounted on a base 102 to grip the gadget, a sensing module including an imaging module and an ultrasonic sensor to detect gadget dimensions, a clamp 104 connected via an adjustable arm 105 having a plurality of links 105a joined by articulated joints 105b, an imaging unit 106 comprising an RGB camera and an IR camera to detect user face position, a hood 107 with extendable plates 107a integrated with a drawer arrangement 107b, a cavity 108 for gadget storage during user inactivity, a roller 109 attached by rods 110 carrying an anti-glare sheet 111, a monitoring module maintaining a digital twin of user posture, a haptic feedback unit 112 for alerts, an electromagnetic charging coil 113 powered by an internal battery for wireless charging.

No. of Pages : 20 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133734 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VISION-CONTROLLED OSTEOGENIC OPTIMIZATION FEEDBACK SYSTEM FOR BONE ADAPTATION

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Rakesh Kumar
2)Alok Kumar Ansu
3)Siddhanth Das

(57) Abstract :
The present invention relates to a vision-based, non-invasive biomechanical feedback system for optimizing bone adaptation during physical activity. The system utilizes marker-less computer vision to capture human movement through standard video input and employs machine learning models to infer internal biomechanical loading parameters including ground reaction forces and joint torques. Based on the inferred parameters, bone strain and strain-rate metrics indicative of osteogenic stimulus are computed. An adaptive optimization mechanism compares the computed metrics with user-specific minimum effective strain thresholds and dynamically updates said thresholds over time. The system provides real-time prescriptive feedback to guide movement patterns within an optimal osteogenic window, thereby enhancing bone formation while minimizing injury risk. The invention operates without wearable sensors, force plates, or radiological imaging and is applicable to rehabilitation, preventive healthcare, sports training, and musculoskeletal health management.

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133796 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATIC DOMESTIC GAS PIPELINE METER SYSTEM

(51) International classification	:F24H 1/50, F24H 1/52, F24D 15/00, F24D 17/00, D06F 58/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Rohit Verma
3)Dr. Hakam Singh

(57) Abstract :
An automatic domestic gas pipeline meter system, comprises of a meter housing 101 operatively connected to a domestic gas pipeline, a sensor suite 102 to monitor real-time gas leakage, pipeline pressure, and environmental conditions, a fail-safe actuator valve 103 operatively coupled to pipeline configured to automatically close gas supply upon detection of gas leakage , a pipe engagement assembly comprising a plate 104, a two-axis lead screw arrangement 106, and a telescopic rod 107 equipped with a clamping unit 108 configured to automatically engage gas pipe 109 from the housing 101 with a stove inlet nozzle 110 thus securing a leak-proof connection, and an imaging unit 111 for monitoring surrounding environment and an embedded microcontroller operatively commands the actuator valve 103 to close automatically to maintain safe conditions, and an alert unit to present real-time safety warnings derived from sensor suite 102 and imaging unit 111.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131890 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN WARDROBE FOR AUTOMATED GARMENT CATALOGING, ORGANIZATION, AND PERSONALIZED OUTFIT SELECTION

(51) International classification	:A47B 61/00, F21V 33/00, G06Q 30/06, G06F 3/0488, H04N 5/225
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr Lovejit Singh
3)Hunardeep Kaur

(57) Abstract :
The present invention relates to an AI-enabled wardrobe system. It is designed to automatically manage, organize, and suggest clothing for users. The system integrates cameras, sensors, and LED indicators to continuously create and maintain a digital catalogue of all garments stored within the wardrobe. it identifies clothing items, detects when they are added, removed, or misplaced, and updates their precise location across designated storage zones by using AI-driven image recognition. LEDs or guided light paths assist users by illuminating requested garments for quick retrieval. Interaction is enabled through a built-in touchscreen display on the wardrobe door or a companion mobile application. Clothing can be added via photos, QR or barcode scanning, or voice commands. The AI assistant further provides personalized outfit recommendations based on weather, mood, or occasion and suggests optimal organization strategies, enhancing convenience, accessibility, and overall wardrobe efficiency.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131891 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VOICE-ACTIVATED SMART DOOR LOCK WITH EMERGENCY EGRESS AND INTEGRATED IOT CONTROL SYSTEM

(51) International classification	:G07C 9/00, E05B 49/00, E05B 47/00, G08B 21/02, G08B 25/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Antriksh Anand
2)Harsh Sharma

(57) Abstract :
The present invention discloses a smart door lock system that integrates biometric voice authentication with an automated emergency escape mechanism to enhance both security and safety in residential, commercial, and hospitality environments. The system employs a voice recognition module that verifies authorized users, enabling secure, hands-free access without physical keys or codes. A built-in emergency feature automatically unlocks the door during hazardous events such as fire, gas leakage, structural vibration, or system failure, ensuring rapid occupant egress. The lock incorporates redundant environmental sensors, AI-based predictive safety algorithms, and IoT-enabled communication to monitor real-time threats and maintain reliable operation even during partial system failures. It is designed as a modular and interoperable device, it integrates seamlessly with smart home platforms and building management systems. The invention enhances access control while prioritizing user safety, privacy compliance, and operational reliability.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131892 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GREEN GUARDIAN: AI-POWERED SOIL HEALTH DIAGNOSIS AND PERSONALIZED PLANT CARE OPTIMIZATION SYSTEM

(51) International classification	:G01N 33/24, G06Q 50/02, G01N 27/06, A01B 79/00, A01B 79/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Shilpa Sharma
2)Vaani

(57) Abstract :
The present invention, titled “Green Guardian – AI-Powered Soil Health Diagnosis And Personalized Plant Care Optimization System” relates to an intelligent, IoT-enabled soil monitoring and plant-care system designed to enhance precision farming. The device integrates a compact multi-parameter soil probe capable of measuring real-time moisture, temperature, pH, electrical conductivity, and nutrient levels (NPK). An on-board AI diagnostic engine analyses the collected data to identify soil deficiencies, predict plant stress, and generate crop-specific recommendations. A distinguishing feature of the invention is its multilingual voice-based output system, enabling farmers to receive guidance in regional languages without requiring digital literacy. The device operates in both online and offline modes, is powered by a solar-rechargeable battery, and is optimized for affordability and rural deployment. By combining advanced sensing, AI analytics, and inclusive communication, the invention provides a holistic and accessible solution for sustainable, data-driven agriculture.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133259 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CONGESTION AVOIDANCE ROUTING SYSTEM AND METHOD THEREOF

(51) International classification	:G05D 1/622, B61L 3/16, B61L 23/04, B61L 23/06, B61L 23/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr Manoj Kumar Bohra

(57) Abstract :
A congestion avoidance routing system (100) for a Network-on-Chip (NoC), the congestion avoidance routing system (100) comprising: an input unit (102) configured to receive one or more data packets such that each data packet comprising source coordinates and destination coordinates; a routing computation unit (104) configured to determine a routing direction based on a deterministic XY routing order while dynamically checking congestion status of neighbouring links; a selection and congestion evaluation unit (106) configured to select an output channel by avoiding congested links and selecting an alternate minimal path when congestion is detected; and an output forwarding unit (108) configured to forward the one or more data packets toward a destination processing element, wherein the congestion avoidance routing system (100) executes a congestion-aware routing technique to reduce latency and improve throughput in two-dimensional mesh NoC. FIG. 1 is the reference figure.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133262 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Deterministic Middleware Framework for Multi-Model AI Orchestration with Selective History and Privacy Control

(51) International classification	:H02B 1/01, B66C 21/06, C01B 39/06, C01B 39/50, B65G 21/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)PULKIT GARG
(72)**Name of Inventor :**
1)PULKIT GARG

(57) Abstract :
The present invention relates to a deterministic middleware framework for governing interaction between artificial-intelligence reasoning engines and external information sources. The framework operates independently of the reasoning engine and enforces rule-based control over event intake, selective retrieval of historical information, deterministic context construction, identity-bound memory handling, validation of cached reasoning and reconciliation of multi-channel inputs. A secure boundary layer ensures that only an authorized governed context is supplied to the reasoning engine and that outputs generated by the engine are subject to governance review before release. An audit and traceability subsystem records governance decisions to enable predictable, compliant and auditable operation. The invention enables consistent and policy-aligned AI behavior across enterprise, regulated and safety-critical environments.

No. of Pages : 35 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133273 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WATER-LEAN SOLVENT COMPOSITION FOR ENERGY-EFFICIENT CARBON DIOXIDE CAPTURE

(51) International classification	:B01D53/14, B01D53/18, B01D53/34, B01D53/62, B01D53/74, B01D53/77, B01J20/28, B01J20/292
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)NAMRATA UPRETI
2)SHAURYA MOHAN

(57) Abstract :
The present invention relates to an energy-efficient, water-lean solvent composition and method for capturing carbon dioxide (CO2) from CO2-containing gas streams. The solvent composition comprises methyldiethanolamine (MDEA), a sterically hindered alkanolamine, and a bio-friendly glycol-ether organic carrier, optionally with a promoter and performance additives, wherein the total water content is less than 30 wt%. The reduced water content lowers solvent heat capacity, volatility, and regeneration energy while maintaining high absorption efficiency. In preferred embodiments, the sterically hindered alkanolamine comprises 2-amino-2-methyl-1-propanol (AMP), and the organic carrier is selected from cyclic organic carbonates and poly-or oligo-alkylene glycol dialkyl ethers. The solvent exhibits low viscosity, reduced degradation, and low corrosivity under regeneration temperatures of 90°C or less. A method of use includes contacting a CO2-containing gas with the solvent in a packed absorption column and regenerating the solvent at low temperature, achieving ≥ 96% CO2 removal efficiency. (Figure-1 shall be the abstract figure)

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132583 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WATER-BASED POLYURETHANE DISPERSION BINDER FOR FLEXOGRAPHIC AND GRAVURE INK APPLICATIONS

(51) International classification	:C09D 11/102, C08G 18/66, C08G 18/32, C08G 18/48, C08G 18/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)NEELAKAMAL MOHAPATRA
2)ANGSHUMAN MUKHERJEE

(57) Abstract :
The present disclosure relates to a water-based polyurethane dispersion (PUD) binder suitable for flexographic and gravure printing inks. The composition includes 10–40% polyol, 5–25% diisocyanate, 1–10% internal emulsifier, 0.5–20% chain extender, 1–15% neutralizing agent, 5–30% solvent, 0.001–1% catalyst, 30–70% water, and optional additives. A method for preparing the PUD is provided, involving prepolymer formation, neutralization, aqueous dispersion, and homogenization. The dispersion exhibits excellent adhesion on PET and BOPP substrates, along with favourable stability, pigment compatibility, flexibility, and chemical resistance, enabling low-VOC printing ink systems.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132585 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EcoPulse: Biodegradable Environmental Impact Tracking Tag for Consumer Packaging

(51) International classification	:G06Q 10/08, G06Q 10/00, G06Q 10/06, G06K 7/10, G06K 19/07
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Purnima Sharma
3)Shalika Grace Das
4)Sweety Dixit
5)Omika Bhalla Saluja
6)Harit Kumar
7)Nand Kishore Sharma

(57) Abstract :
The invention is an eco-friendly environmental impact tracking tag tailored to appear within consumer packaging. The tracking tag contains organic sensors and a circuit created with bio-ink to collect monitoring information about environmental exposure variables (such as sunlight, humidity, and temperature), which is converted into meaningful display metrics for estimating a timeline for the packaging to decompose. The tag communicates wirelessly with a mobile application, giving users real-time feedback about their sustainability metrics and disposal instructions. Overall, the invention supports eco-friendly consumer behavior via continuous awareness about packaging waste, supports honest, transparent, and actionable claims made about packaging, and allows for data-driven improvements in material design around sustainability.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025

(21) Application No.202511132586 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Sleep-Enhancing Smart Pillow with Sensors

(51) International classification	:A47G 9/10, A61F 5/56, A61B 5/00, A61B 5/11, A61M 21/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Nandita Maurya
3)Shalika Grace Das
4)Harit Kumar
5)Omika BhallaSaluja
6)Nand Kishore Sharma

(57) Abstract :
The present invention relates to a smart pillow, that includes vibration and sound sensors to assist with reducing snoring and improving sleep posture. The invention utilizes sound sensors to monitor snoring patterns, pressure sensors to detect improper posture, and a microcontroller to activate gentle vibrations to correct those issues. Wireless technology allows the user to analyze sleep patterns in a mobile application that shares sleep data with the user. With the integrated nature of the invention, efficiency and cost of the invention increases as it contains snore reduction, posture monitoring, and data-tracking sleep management into a single pillow that is functional and comfortable. The pillow also intends to improve personal health by reducing risks that come from poor sleep and therefore boots long-term wellness through non-invasive technology.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2025
(21) Application No.202511132596 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM FOR DYE DEGRADATION IN WASTEWATER USING REGENERABLE ZINC OXIDE NANOPARTICLES

(51) International classification	:B82Y30/00, B82Y40/00, C01G9/02, C02F1/30, C02F1/72, C02F101/30, C02F1/32, B01J23/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)DR. MOHIT SAHNI

(57) Abstract :
The present disclosure provides a system for photocatalytic degradation of organic dyes in wastewater treatment applications. The system comprises a reactor housing configured to receive an influent containing dye-contaminated wastewater, a nanoparticle dispersion unit comprising zinc oxide nanoparticles synthesized through a co-precipitation process using a floral extract and zinc nitrate hexahydrate represented as $Zn(NO_3)_2 \cdot 6H_2O$, a solar exposure interface adapted to direct incident sunlight toward the nanoparticle dispersion unit for initiation of photocatalytic activity, a collection unit configured to receive an effluent comprising photodegraded byproducts, and a nanoparticle regeneration assembly configured to separate, recondition, and reintroduce the zinc oxide nanoparticles for repeated use. Fig. 1

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134483 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ROTATING BENDING FATIGUE TESTING MACHINE AND METHOD OF CONDUCTING A ROTATING BENDING FATIGUE TEST

(51) International classification	:G01N3/02, G01N3/14, G01N3/20, G01N3/62, G01M13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)GUPTA, Nikunj
3)DATLA, Naresh Varma

(57) Abstract :
A rotating bending fatigue testing machine (100) is disclosed for conducting high-cycle fatigue tests under fully reversed loading conditions. The machine may include a stress adjusting member (116) having multiple discrete positions (116b) for receiving one or more weights (118), wherein placement of weights (118) at different positions (116b) generates distinct bending moments. A counterweight arrangement balances components connected to a specimen holding assembly in an unloaded state. The specimen holding assembly may be operatively connected to the stress adjusting member (116) via a connecting member to apply a cantilever bending load on the specimen. A motor assembly (103) rotates the specimen, and an adjustable mounting arrangement with a slot (106a, 106b) enables repositioning of the motor assembly (103) to accommodate specimens of varying lengths, thereby enhancing dimensional versatility and enabling fatigue testing across a broad range of materials.

No. of Pages : 47 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134485 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A VEHICLE-MOUNTED INLINE FUEL INLET MONITORING SYSTEM FOR REAL TIME FUEL QUANTITY AND QUALITY VERIFICATION.

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
The present invention relates to a vehicle-mounted inline fuel inlet monitoring system configured to be installed within the fuel inlet path of a vehicle fuel tank. The system enables real-time measurement of fuel quantity entering the tank and detection of fuel adulteration at the point of fueling. The system comprises a hollow conduit housing fuel flow sensing and fuel quality sensing units, a control unit, and an electronically actuated fuel flow control mechanism configured to restrict fuel entry upon detection of abnormal or adulterated fuel conditions. The invention is applicable to two-wheelers, three-wheelers, four-wheelers, and heavy/commercial vehicles.

No. of Pages : 24 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134489 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A REINFORCEMENT LEARNING DRIVEN DIGITAL TWIN SYSTEM FOR PERSONALIZED INDOOR AIR QUALITY MITIGATION

(51) International classification	:G06N 20/20, G06N 3/0985, G06N 3/09, G06N 3/091, G06N 3/092
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Sourabh Singh Verma

(57) Abstract :
The present invention discloses a reinforcement learning driven indoor air quality mitigation system (100) for personalized, health-centric environmental control. The system comprises an environmental sensing module (102) configured to monitor indoor air parameters and a physiological sensing module (104) configured to capture occupant health indicators. An edge computing unit (106) performs data fusion and AI-based health risk assessment to generate individualized health exposure risk scores. A health-centric digital twin module (108) models indoor air dynamics, simulates airflow and pollutant dispersion, and predicts occupant-specific exposure trajectories. A reinforcement learning control module (110) autonomously determines optimal mitigation strategies based on predicted health impact. A mitigation actuation module (112) executes person-centric, micro-zonal mitigation actions, while a feedback interface (114) enables continuous learning and adaptive improvement of indoor air quality management. Reference Fig 1
No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134510 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SHOCK-ABSORBING CHILD SECURING HARNESS DEVICE, SYSTEM, AND METHOD THEREOF

(51) International classification	:A47D13/08, A62B35/00, A62B35/04, A47D13/02, B68B5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Rajendra Narayan Telore

(57) Abstract :
Disclosed herein is a shock-absorbing child securing harness device, system, and method thereof (100) that comprises a back support pad (102) configured to be positioned against a child's back or chest, wherein the back support pad (102) is operatively connected to the adjustable shoulder straps (104) and adjustable waist straps (106), a plurality of adjustable shoulder straps (104) and adjustable waist straps (106) integrated with shock-absorbing mechanisms, wherein the adjustable shoulder straps (104) extend from the upper portion of the back support pad (102) and the adjustable waist straps (106) extend from the lower portion, a securing belt (110) operatively connected to the adjustable waist straps (106) and configured to establish a secure connection between the child and the adult, detachable safety cap (112) configured to be operatively attached to the back support pad (102) using connectors and designed to provide head protection. Claims: 10 Figures: 6

No. of Pages : 31 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133514 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Formulation and Evaluation of Sugar-Free Tomato Ketchup Using Stevia and Erythritol

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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9)Manisha
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11)Preeti
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9)Manisha
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(57) Abstract :
The present invention relates to a sugar-free tomato ketchup formulation intended for diabetic and calorie-conscious consumers. The formulation utilizes a synergistic combination of natural sweeteners, stevia and erythritol, to replace sucrose while maintaining sugar-like sweetness, mouthfeel, viscosity, and overall sensory acceptability. Erythritol provides bulk and texture, while stevia imparts high-intensity sweetness without significantly increasing caloric value. The optimized formulation overcomes bitterness commonly associated with stevia-only products and exhibits physicochemical stability under acidic pH and thermal processing conditions. The ketchup is free from added sugar and artificial sweeteners and demonstrates reduced caloric content, improved shelf stability, and suitability for regular consumption. The invention provides a healthier alternative to conventional tomato ketchup without compromising taste, texture, or consumer acceptance.

No. of Pages : 9 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133586 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN ADAPTIVE MULTI-SOURCE ENERGY FUSION IRRIGATION SYSTEM AND A METHOD THEREOF

(51) International classification	:G10L 15/065, H01C 17/22, H01C 17/30, B64F 1/24, F16L 59/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)DR. SHAHIDA KHATOON
4)DR. AMEER FAISAL

(57) Abstract :
Disclosed is an adaptive multi-source energy fusion irrigation system (100) including a sensing assembly (102) comprising a plurality of sensors (104) configured to acquire soil and environmental parameters including soil-moisture, temperature, humidity, and illumination intensity. An energy-harvesting unit (110) connected to the sensing assembly (102) captures and regulates electrical energy from solar, thermal, and vibration sources to provide a regulated power supply. A housing element (118) encloses a control unit (120) electrically connected to the sensing assembly (102) and energy-harvesting unit (110), the control unit comprising a data pre-processing module (122), an analysing module (124), a feedback module (126), an optimisation module (130), and a decision-control module (132) to process sensor and energy data and generate actuation commands. An irrigation actuation assembly (138) regulates water flow through pumps, valves, or sprinklers, while a battery unit (136) stores energy.

No. of Pages : 37 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133638 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD AND SYSTEM FOR MANUFACTURING A VACUUM EMBOSSING CERAMIC ROLLER

(51) International classification	:F24T 50/00, B60T 13/72, B61L 27/02, B60T 13/46, H02S 10/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(72)**Name of Inventor :**
1)Mohit
2)Bindu

(57) Abstract :
The present invention is about a way to make a vacuum embossing ceramic roller using a method that combines sequential molding and rotary vacuum-assisted composite forming. The process starts with making an embossed pattern using a multilayer molding sequence that includes a silastic negative, a polyvinyl chloride positive, and an epoxy negative. Then, a cylindrical silicone mold is made that has the right texture. A vacuum holding mechanism holds the mold in place inside a concentrator of a rotary forming assembly. The assembly rotates at controlled speeds while ceramic-forming materials like epoxy resin, quartz sand, silica powder, and fiber glass thread are injected and deposited one layer at a time. Using centrifugal and vacuum forces, you can evenly distribute, transfer patterns with high fidelity, and consolidate without any gaps. Controlled curing of the deposited layers makes a dense, structurally glass thread ceramic roller that is harder, and more accurate for embossing.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133281 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Method for Router-Level Fault-Tolerant Communication in Network-on-Chip Systems

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Manoj Kumar Bohra

(57) Abstract :
The present invention relates to a method for router-level fault-tolerant communication in network-on-chip systems. Router failure happens when router parts stop working. Parts like input ports, channels, or control logic can fail. Failure can be permanent or temporary. Permanent failure comes from wear and tear. Temporary failure comes from soft errors like bit flips. When a router fails, packets cannot move. This can stop communication and cause deadlock. In a 2D mesh, routers are in a grid. Each router connects to four sides: North, South, East, West. It also connects to one local core. If router at (2,2) fails in a 4×4 mesh, packets cannot pass through it. This breaks the path. The present invention method combines adaptive routing and bypasses paths. The method comprises: continuously monitoring operational states of router components to identify router failures; detecting a failure based on fault indicators including packet forwarding blockage or control logic malfunction; and classifying the failure as temporary or permanent. Upon detecting a faulty router, routing decisions are dynamically modified to avoid the faulty router while maintaining communication between source and destination nodes. Alternative paths are selected using adaptive routing rules, and deadlock is avoided by enforcing routing constraints. Logical bypass paths are established to skip the faulty router, and the network is dynamically reconfigured by updating routing control information. Original routing paths are restored when temporary faults are resolved.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133282 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Fault-Tolerant Routing System and Method for Two-Dimensional Network-on-Chip

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Manoj Kumar Bohra

(57) Abstract :
The present invention relates to a fault-tolerant routing system and method for two-dimensional network-on-chip. The fault-tolerant routing algorithm can tolerate all single-link. The method comprises: maintaining fault information in four directional registers at each router; hereby enabling advance detection and awareness of faults; upon detection of a fault, the register entries of neighboring routers are dynamically updated; and fault-free routing paths are selected from the available paths based on the stored fault status and predefined turn-restriction rules. The invention fixed size register reduces the long table requirement at each router that generally dramatically increases with network size. The heat-map shows that the proposed distributes traffic more evenly in faulty networks and thus achieves significant performance improvement for network throughput. The hardware overhead of the proposed work is also low as it works on a turn model, which eliminates the requirement of a virtual channel and uses fixed smaller register entries.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133300 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR INTEGRATED TECTONO-GEOMORPHIC ANALYSIS USING MULTI-RESOLUTION TOPOGRAPHIC DATA

(51) International classification	:G02B 6/13, B65D 5/4805, E21D 13/02, B65D 5/465, H04L 41/022
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An integrated tectono-geomorphic analysis system and computer-implemented method are disclosed for basin-scale landscape evolution assessment using multi-resolution digital elevation models. The invention computes and integrates multiple geomorphic indices, including hypsometric integral, stream length–gradient index, normalized channel steepness, χ-analysis, and swath profiles within a unified workflow. The method enables subdivision of a drainage basin into upper, middle, and lower geomorphic domains and identifies tectonically active zones, transient incision reaches, and alluvial dynamics. By integrating multiple indices across DEM resolutions, the invention provides a robust and reproducible framework for interpreting tectonic, climatic, and erosional controls on landscape evolution in active orogenic regions.

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202511131789 A
(19) INDIA
(22) Date of filing of Application :25/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : A easily cleanable water storage tank.

(51) International classification	:E03B11/02, B08B9/032, B65D88/06, B65D88/54
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An easily cleanable water storage tank with an internal bottom configuration and a method for maintaining cleanliness of water stored therein are disclosed. The system comprises an upgraded water storage tank including a floor, at least one inlet, a supply outlet, an overflow outlet, a draining outlet provided with a valve for controlled drainage, and a pump. The water storage tank is characterized in that the internal floor of the tank is formed as a conical bottom sloping inwardly from all sides, facilitating the collection of sediments toward a lower sloping end. The supply outlet is positioned on a side wall of the tank above the conical bottom, thereby preventing withdrawal of settled impurities. The draining outlet is located on the side wall of the tank below the inclined floor at the sloping end, is connected through a passage formed along the inclined floor to an external valve for operating drainage. The drainage passage and valve arrangement enable complete removal of accumulated sediments and contaminants, and the drainage system may be extended externally as per user requirements.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025

(21) Application No.202511131793 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EFFERVESCENT TEA COMPOSITION AND METHOD FOR PREPARING TEA BEVERAGE

(51) International classification	:A23F3/14, A23F3/16, A23F3/34, A23L3/40, A23L33/10, A23L27/10, A23L27/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Ravi Rawat
3)Shweta Sharma

(57) Abstract :
The present disclosure relates to an effervescent tea composition and a method (100) for its preparation. The composition includes a tea extract, at least one acidic component, at least one alkali component, at least one sweetener, at least one binding agent, and a lubricant, with optional flavoring agents and herbal actives. The acidic component may include citric acid or malic acid, and the alkali component may include sodium bicarbonate or potassium bicarbonate. The composition may further incorporate sweeteners such as sucrose, fructose, stevia, or sucralose, along with binding agents including polyvinylpyrrolidone, maltodextrin, or microcrystalline cellulose. The method (100) includes steps of dry-blending the tea extract with the acidic and alkali components, granulating the mixture through dry-granulation or direct-compression to obtain free-flowing material, integrating sweetener, binding agent, and lubricant, and compressing the integrated material to form a stable, quick-dissolving effervescent tea composition with maintained aroma quality.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025

(21) Application No.202511131794 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EFFERVESCENT COFFEE COMPOSITION AND METHOD FOR PREPARING COFFEE BEVERAGE

(51) International classification	:A23F5/14, A23F5/36, A23F5/44, A23F5/46, A23L33/10, A23L27/10, A23L27/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Shweta Sharma

(57) Abstract :
The present discosure relates to an effervescent coffee composition formulated to produce an instant coffee beverage upon dissolution in hot or cold water. The composition includes coffee extract, an effervescent acid-base system, sweeteners, binding agents, stabilizers, lubricants, and encapsulated aroma oils that preserve volatile coffee notes during processing and storage. The controlled effervescence generated during dissolution produces fine micro-foam resembling espresso crema, while a balanced pH-buffering system prevents excessive sourness and maintains desirable flavor characteristics. The invention further enables incorporation of functional nutraceutical actives, including L-theanine, ginseng, MCT oil powder, vitamins, or botanical adaptogens, to create specialized beverage variants. A method (100) for preparing composition includes low-humidity blending, dry granulation or direct compression, aroma encapsulation, and moisture-protected packaging to ensure product stability. The resulting effervescent coffee tablet provides a portable, residue-free, equipment-free coffee solution with enhanced aroma release and consistent caffeine delivery.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133314 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Lightweight Checksum-Based IoT Communication Method

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a lightweight checksum-based communication method for Internet-of-Things (IoT) devices. The present method introduces a novel lightweight checksum algorithm that generates a 32-bit output and achieves high-entropy bit mixing through the incorporation of MurmurHash-based operations. The method significantly reduces computational cost while providing a real-time mechanism for verifying message integrity in resource-constrained IoT communication environments. This allows for near real-time message integrity verification with minimum computing. The method has been validated through simulation, and standards have been drawn for correctness and performance. Overall, the proposed checksum method bridges the gap between performance and security requirements for resource-sensitive IoT applications. Over the last few years, IoT devices have gained significant popularity due to their capability to connect daily objects to the Internet, thereby enhancing automation, operational efficiency, and enabling smart, data-driven decision-making. Each device transmits valuable data to other devices on the network, and this data plays an important role in decision-making. Therefore, verification of data is crucial at the receiver's end. Standard methods such as CRC32 and HMACs are prone to collisions and require huge computational power. The present invention addressed the limitation of the traditional methods.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133315 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN APPARATUS FOR DEVICE-BASED SKIN LESION ANALYSIS USING ENSEMBLE LEARNING

(51) International classification	:A61B 5/0533, A61Q 19/02, A61Q 19/04, C14B 15/08, C14C 15/00	(71)**Name of Applicant :** **1)Dr. RAHUL KUMAR** Address of Applicant :Faculty of Computing and Informatics, Sir Padampat Singhania University, Bhatewar, Udaipur, Rajasthan- 313601 India. Rajasthan India **2)SONALI RAHUL DHAVE** **3)ASHISH SEN** **4)KONIKA ABID** **5)SUNIT KUMAR MEENA** **6)ROOPALI KACHHI**
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(87) International Publication No	: NA	**5)SUNIT KUMAR MEENA**
(61) Patent of Addition to Application Number Filing Date	:NA :NA	**6)ROOPALI KACHHI**
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
An apparatus for device-based skin lesion analysis using ensemble learning comprises an imaging unit (101), a processing and control unit (102), an ensemble learning module (103), a data management unit (104), and an output interface (105). The imaging unit (101) captures standardized lesion images, which are processed locally and analyzed using multiple machine learning models to generate consolidated lesion classification and risk assessment outputs for real-time, non-invasive diagnostic support.

No. of Pages : 26 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133333 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A LATERAL FLOW IMMUNO-CHROMATOGRAPHY BASED RAPID DIAGNOSTIC TEST CARD FOR IDENTIFICATION OF BETA THALASSEMIA

(51) International classification :G01N33/53
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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2)Kusum Anand
3)Priya Kakran

(57) Abstract :
The present invention relates to a rapid diagnostic test card (100) based on lateral flow immunochromatography for identification and validation of target beta-thalassemia antibodies and the card (100) comprising a test strip (102) comprising at least two sample wells (104) carved on the surface of the test strip (102) and the two sample wells (104) configured to receive a biological sample collected from a subject. The test strip (102) comprising at least two result windows (106) carved on the surface of the test strip (102) and the two result windows (106) further having a plurality of labelled regions indicating the presence of the specific haemoglobin variants. The test strip (102) comprising the control band (108) configured to facilitate quality control and accuracy verification. The card (100) comprising a buffer bottle (110) containing a buffer reagent to facilitate the processing of the biological sample collected from the subject.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133687 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FAULT-TOLERANT SOFT-SWITCHING MODULAR BIDIRECTIONAL DC-DC MULTIPORT CONVERTER SYSTEM

(51) International classification	:H02M1/32, H02M1/08, H02M1/00, H02M3/155
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)MASOOM, Modassir

(57) Abstract :
The present disclosure relates to a fault-tolerant soft-switching modular bidirectional DC-DC multiport converter system (100) comprising cascaded modular converter modules (a positive input terminal (P) (104), an output terminal (V01) (106), and a battery terminal (Vbat) (108)) interconnected via an interleaved network with phase-shifted operation. The system (100) employs semiconductor switches (S11, S21) (116, 118) integrated with a resonant auxiliary circuit (Lr1, Ca1, Cr1) (120, 122, 124) to achieve near-zero voltage and current switching. A redundant interleaved branch architecture with freewheeling diode elements is overseen by a closed-loop control mechanism, while a time-multiplexed control module employing a microcontroller with dual control loops alternately actuates modes to supply power to the boost and buck output ports, enabling reliable fault tolerance and multiple operating modes for efficient bidirectional energy flow.

No. of Pages : 49 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133695 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR TOKENIZED CREDIT DISBURSEMENT

(51) International classification	:B65D 83/12, H04L 47/215, H04L 12/417, H04L 12/433, E21D 13/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Napinder Kaur

(57) Abstract :
System and method for tokenized, behaviour-driven real-time adjustment of agricultural credit disbursement. The present disclosure relates to the technical field of financial technology for agricultural risk management. The invention provides a method and system (FIG. 1) for dynamically adjusting agricultural credit disbursement. The method comprises receiving behavioural and environmental inputs, which are processed by a behaviour analytics engine to generate indicators. These indicators are used by a risk tokenization engine to update a plurality of modular risk tokens, each representing a distinct risk factor. A policy and decision engine evaluates a composition of the updated risk tokens to derive conditional disbursement actions. An orchestration controller coordinates the data flow and execution of actions across system modules. All token states, updates, and disbursement decisions are immutably recorded in an audit and token ledger, providing an auditable history. The principal use is to enable real-time, evidence-based control over credit disbursement.

No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133717 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SEAT MANAGEMENT SYSTEM FOR PUBLIC TRANSPORTATION

(51) International classification	:G06F 16/93, G06F 16/25, H04L 41/0695, G06F 16/185, H04N 21/266
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Anuranjan Sharda

(57) Abstract :
A seat management system for public transportation, comprising a user interface adapted to be installed with a computing unit to enable a user input for maintaining a personal profile including personal details and emergency contact information, connected with a central server configured with a communication unit, a booking module is configured with server and accessed via user interface to enable booking of tickets, a prediction module configured with server and accessed via user interface predicts probability of seat availability before boarding based on real-time data and historical patterns, a ticketing unit is installed at entrance of vehicle for on-location booking of tickets, a pressure transducer is installed in each seat to detect occupancy, and an allocation module allocates tickets based on a predefined priority list during surges.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133797 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SAFETY SYSTEM FOR A CLOTH IRON

(51) International classification	:D06F75/00, D06F75/26, D06F79/00, D06F79/06, G01B21/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)Neha Sharma

(57) Abstract :
A safety system for a cloth iron, comprising a sensing array 101 for detecting proximity of a sensitive surface including skin of a user and a delicate fabric, a switch 102 regulating an energy supply to heating element of the iron, a temperature sensor 103 for detecting an instant temperature of the soleplate, to enable regulation of the switch 102, a safety module configured with a control unit to determine proximity of the soleplate from skin of user, a visual indicator 104 indicating a hazardous condition defined by the distance between the soleplate and the skin of user, a cooling means 105 rapidly reducing temperature of the soleplate, a user interface installable with a computing unit 107 receiving remote alerts regarding occurrence of hazardous condition, and a vibration unit 106 providing haptic alert upon detection of the hazardous condition.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133798 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LPG CYLINDER SAFETY DEVICE

(51) International classification	:B25J 19/06, A44B 9/10, A47J 27/09, E05D 15/526, B02C 23/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)Dr. Neeraj
2)Dr. Vijay Kumar Sinha

(57) Abstract :
An LPG cylinder safety device comprises of a platform 101 configured to accommodate a domestic LPG cylinders of varying sizes, a sensor suite 201 configured to detect cylinder dimensions, weight, gas leakage, and environmental conditions in real time, a plurality of cascading plates 102 to fully enclose the LPG cylinder, an imaging unit 202 installed via an extendable link 203 to detect the position of the cylinder regulator knob for identifying an open or closed state of gas flow, a knob control assembly to automatically open or close the cylinder regulator knob in response to gas leakage detection, a pair of horizontal flaps 103 installed via a pair of motorized hinge joints 104 to deploy the flaps 103 for enclosing top portion of the cylinder, a microcontroller is operatively coupled to a cloud database and a user interface provided in a computing unit.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133799 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CEILING-FAN MOUNTED SAFETY DEVICE FOR THREAT MITIGATION

(51) International classification	:F24F 11/89, F25D 29/00, B25J 19/06, A44B 9/10, A47J 27/09
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Shivendu Prashar
2)Arun Lal Srivastav

(57) Abstract :
A ceiling-fan mounted safety device for threat mitigation, comprising of a hollow structural body 101 configured to be securely affixed around an existing a ceiling fan assembly, a weight sensing unit 102 for detecting load variations applied to the ceiling fan, a highly sensitive microphone 103 continuously detects distress or agitated sounds in vicinity to the fan, a thermal imaging camera 104 for evaluating thermal signatures, stress indicators and facial expressions of a user located below the fan, a gyroscope sensor 105 detects angular displacement, tilting, and abnormal vibrations of the fan, a sliding unit 106 integrated with a horizontal rod 107 to rotate the rod 107 in a circular motion around the body 101, forming a dynamic physical barrier around the fan assembly, preventing engagement of a rope with the ceiling fan assembly, a safety arrangement prevents user self-harm by interacting with the rope placed on the fan assembly.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133800 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GESTURE-INDUCED POWER REFLUX WIRELESS POINTING DEVICE

(51) International classification	:G06F3/01, G06F3/033, G06F3/038, G06F1/26
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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Address of Applicant :Atal Shiksha Kunj, Pinjore-Nalagarh National Highway (NH-105), Kalujhanda, Distt.-Solan Himachal Pradesh 174103, India. Solan Himachal Pradesh India
(72)**Name of Inventor :**
1)Dr. Ashutosh Kumar Dubey
2)Dr. Ravita Chahar

(57) Abstract :
A gesture-induced power reflux wireless pointing device, comprises of a gesture-capture layer 101 integrated with a wireless pointing device 102 for detecting user gestures including clicks, drags, and scrolls, a plurality of dynamic flux conversion nodes 103 comprising piezoelectric impulse converters and triboelectric nano-films to convert mechanical flux from gestures into electrical signals, a flux rectification and conditioning circuit 201 to merge multi-source electrical outputs, stabilize voltage, and eliminate transient spikes, an AI-powered flux orchestrator (AIFO) module 203 embedded within a microcontroller to monitor gesture distribution and dynamically reallocate energy flow, a dual-stage energy storage unit 104 with a graphene super- capacitor 104a for instantaneous power bursts and a solid-state micro-battery 104b for long-term retention, a power regulation and output layer 202 to deliver stable energy to core components, and an LED indicator 105 providing real-time feedback on energy flow and charge status.
No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131901 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LOW CARBON BINDER FOR CONCRETE

(51) International classification	:C04B 28/04, C04B 28/02, C04B 18/04, C04B 18/14, C04B 18/08, C04B 40/00, C04B 22/00, C04B 28/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Lalit Singh
2)Anurag Misra
3)Jayaramulu Kolleboyina

(57) Abstract :
The present invention provides a low carbon binder for concrete utilizing a binder system as an alternative to conventional cement-based concrete. The composition achieves mechanical and durability performance comparable to traditional concrete, including compressive strength, initial surface absorption (ISAT), and water penetration resistance. By employing specific binder materials and optimized mix design, the concrete facilitates natural carbon dioxide sequestration, contributing to a significant reduction in overall carbon footprint. The invention offers an environmentally sustainable construction material suitable for a wide range of structural and non-structural applications, enabling reduced reliance on energy-intensive Portland cement while maintaining performance standards. The approach combines enhanced durability, strength, and eco-efficiency, providing a practical solution for low carbon construction technologies and promoting sustainability in modern infrastructure development.

No. of Pages : 31 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131949 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A ROOT-ZONE BASED WASTEWATER TREATMENT SYSTEM EMPLOYING INDIGENOUS INDIAN AQUATIC MACROPHYTES

(51) International classification	:C02F 3/32, C02F 9/14, C02F 3/10, C02F 3/34, C02F 3/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)ASHISH KUMAR SINGH
2)PROF. GOVIND PANDEY
3)PROF. CHANDRA SHEKHAR PRASAD OJHA

(57) Abstract :
The present invention relates to a sustainable and low-cost root-zone wastewater treatment system belonging to the field of ecological and decentralized wastewater management. The system employs only indigenous Indian aquatic and semi-aquatic macrophytes for the removal of organic pollutants, nutrients, and heavy metals from domestic and industrial wastewater. The treatment system comprises multiple sequential zones including subsurface and surface flow zones planted with Vetiveria zizanioides, Canna indica, Eichhornia crassipes, and Lemna minor, selected for their high phytoremediation efficiency and climatic adaptability. Wastewater is treated through a combination of physical filtration, microbial degradation, plant uptake, sedimentation, and adsorption mechanisms. Pilot-scale studies demonstrate removal efficiencies of more than 85% for biochemical oxygen demand, approximately 70% for chemical oxygen demand, and over 80% for selected heavy metals within a hydraulic retention time of 3–5 days. The system is modular, scalable, energy-efficient, and particularly suitable for rural and semi-urban regions lacking centralized sewage treatment infrastructure.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131979 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTERLOCKING MASONRY BLOCKS MANUFACTURED FROM RECYCLED DEMOLISHED CONCRETE AGGREGATES

(51) International classification	:E04C 1/00, E04B 2/02, C04B 18/16, C04B 28/02, E04C 1/40	(71)**Name of Applicant :** **1)Panipat Institute of Engineering and Technology (PIET)** Address of Applicant :Samalkha, Haryana Haryana India (72)**Name of Inventor :** **1)Dr. Dhirendra singhal** **2)Er. Deepak Juneja** **3)Er. Devender** **4)Ms. Chetna**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
[035] The invention relates to interlocking masonry blocks manufactured from recycled demolished concrete aggregates, cast in standardized cubic dimensions of 8 inches × 8 inches × 8 inches, and incorporating a locking mechanism comprising a male projection on one face and a corresponding female recess on the opposite face to enable mortarless assembly. The blocks are produced using a concrete mix of cement, sand, and recycled coarse aggregates in a ratio of 1:2:4, achieving a compressive strength of approximately 13 N/mm². The invention provides an eco-friendly, durable, and cost-effective building solution that reduces construction waste, minimizes natural resource consumption, enhances construction speed, increases usable floor area, prevents wall dampness, and aligns with global sustainability objectives, offering a practical alternative to conventional brick and concrete masonry systems.
Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133718 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS COOKING DEVICE

(51) International classification	:A47J43/07, A47J43/18, A47J44/00, B26D3/26, A23N15/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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Address of Applicant :Sri Hargobindgarh, Phagwara-Hoshiarpur Road, Phagwara, Punjab 144401, India. Phagwara Punjab India
(72)**Name of Inventor :**
1)Dr. Neetu Mahendru

(57) Abstract :
An autonomous cooking device, comprises of a housing 101, multiple chambers 128 stores cooking ingredients, a thermal regulator maintains temperature of the ingredients within a predetermined range, a dual axis lead screw arrangement 104 having an extendable blade 105 to cut ingredients positioned on a tray 106, a robotic arm 107 transfers the ingredient onto the tray 106 for cutting, a set of spouts 110 washes ingredients, a camera 112 captures visuals of ingredient to determine ingredient type, a transferring arrangement transfers the cut ingredients from the tray 106 into a utensil 113, the recess 114 integrated with a heating means 115 for cooking, a pusher 119 pushes the cut ingredients onto the conveyor 118, a circular sliding unit 120 having an stirrer 121 for stirring of ingredients in utensils 113 of various depths during cooking, a suction channel 124 conveys the seasonings into the utensil 113 during cooking.
No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202511133719 A
(19) INDIA
(22) Date of filing of Application :30/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : PET MONITORING COLLAR

(51) International classification	:A01K27/00, A01K29/00, G16Y40/10, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Aashna Khurana
2)Kirtika Thakur
3)Muskan Kalkotra
4)Dr. Neetu Mahendru
5)Dr. Sameer Varma

(57) Abstract :
A pet monitoring collar comprises of a motorized roller 101 attached to a telescopic U-shaped assembly 103 that automatically extends to cover the pet’s body, a hollow semi-circular assembly 104 includes multiple iris holes 112 to enable the pet to breathe, a Laser light 105 projects a focused beam of light to catch the pet’s attention and stimulate the curiosity, an AI camera 106 monitors the surroundings of the pet, a small chamber 107 contains a soft fragrance stored inside, a temperature sensor for pet’s temperature detection, an IoT-based communication module enables the collar 102 to analyze the duration and frequency of each activity the pet performs, a microphone 109 captures the pet’s bark pattern, a GPS module enables the owner of the pet to receive real-time location updates, a processing module embedded with AI and ML protocols analyze behavioral patterns of the pet and determine the pet’s emotional state.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133720 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DENTAL CARE ITEMS STORAGE AND SANITIZATION DEVICE

(51) International classification	:G11C 11/10, G11C 5/04, G11C 11/00, G11C 23/00, B41J 5/46
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Vansh Khurana
2)Aastha
3)Yashika
4)Dr. Ramandeep Singh
5)James Kanda
6)Sakshi Sardana

(57) Abstract :
A dental care items storage and sanitization device, comprising a housing 101, a case 102 for sanitising, the case 102 disposed over a slider 103 provided along an inner length of the housing 101, a plurality of slots 109 to store a plurality of toothbrushes, an extendable gripper 110 to fetch the toothbrush from the case 102 and position the toothbrush into the slot, a biometric authentication unit 108 to verify an identity of the user and determine a slot having the toothbrush, a dryer unit 104 to dry the toothbrush, a sterilisation unit 105 to sterilize the toothbrush , a water sprinkling unit 106 to sprinkle water onto the toothbrush, a toothpaste dispensing unit 107 to dispense toothpaste onto the toothbrush, a pair of extendable brackets 102a to hold the toothbrush, a rotatable extending base 102b to raise the toothbrush outwards from the case 102.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202511133721 A
(19) INDIA
(22) Date of filing of Application :30/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI-FUNCTIONAL WINDOW

(51) International classification	:E06B1/36, E06B3/32, E06B3/42, E06B3/54
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Er. Gagandeep Singh Bains
2)Dr. Sumit Chopra
3)Manjot Singh
4)Amit Bangar

(57) Abstract :
A multi-functional window, comprising a protective outer frame 101 designed for installation within a window opening, a plurality of vertical sliding rails 102 guiding a glass pane 103 integrated with a solar panel sheet 104 for harnessing solar energy, a plurality of filtration units 105 for filtration, a plurality of essential oil diffusers 206 that release fragrances, a plurality of motorized rollers 106 on the top inner periphery support weather-specific sheets 107, secured by U-shaped locking units 108 with primary electromagnets 109, a surveillance camera 204 enables real-time monitoring, motion detection, and image processing, a motorized spindle 201 with a mesh 202 and secondary electromagnets 203 forms a protective canopy.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133339 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WAR FIELD SPY ROBOT FOR REAL-TIME SURVEILLANCE, RECONNAISSANCE, AND REMOTE OPERATION IN HIGH-RISK MILITARY ZONES

(51) International classification	:A61B 34/30, A61B 34/37
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Mandipa Roy
2)Nainsi Singh
3)Princy Pandey
4)Isha Tripathi
5)Karunakar Tripathi

(57) Abstract :
The invention relates to a war field spy robot designed for real-time surveillance, reconnaissance, and data acquisition in high-risk military environments. The robot comprises a compact and rugged mobile platform equipped with a wireless camera for continuous video transmission to a remote operator, enabling real-time monitoring of enemy activity and hazardous terrain from safe locations. The system integrates a sensor-based navigation module that identifies and avoids obstacles autonomously, ensuring smooth traversal across uneven or debris-filled war fields. A stable wireless communication interface supports uninterrupted bidirectional data flow between the robot and the operator, maintaining control and visual feedback under conditions of interference or terrain-induced signal obstruction. The robot further incorporates optional night-vision or low-light imaging functionality for 24×7 operational capability. The invention enhances battlefield intelligence, reduces human exposure to danger, and supports informed decision-making by providing continuous, reliable situational awareness in hostile environments.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133340 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED ADAPTIVE MEAL PLANNING AND PREDICTIVE PANTRY MANAGEMENT SYSTEM

(51) International classification	:H04W 16/18, A23L 13/10, G08G 5/32, G08G 5/34, A23L 17/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Beena Srivastava
2)Saksham Tyagi
3)Sayed Abbas Raza
4)Vivek Kumar

(57) Abstract :
The invention relates to an AI-powered adaptive meal planning and predictive pantry management system configured to generate personalized dietary recommendations based on user goals, preferences, ingredient availability, and historical behavior. The system integrates a self-learning meal recommendation engine, a nutrient-equivalent ingredient substitution model, and a predictive pantry intelligence module to deliver dynamic, context-aware meal plans. By continuously analyzing user interactions, consumption patterns, nutritional targets, and ingredient lifecycle data, the system updates its internal models to provide evolving recommendations, proactive grocery forecasts, and optimized resource utilization. The invention further enables sustainable and cost-effective food planning by minimizing waste, ensuring nutritional fidelity through intelligent substitutions, and aligning meal decisions with real-time pantry conditions.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133341 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT-ENABLED REAL-TIME ENVIRONMENTAL MONITORING AND PREDICTIVE ANALYTICS SYSTEM FOR INDUSTRIAL AND HAZARDOUS WORKSPACES

(51) International classification	:B63B 79/15, H04L 43/08, G06F 11/30, H04B 17/00, G21C 17/022
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Neelam Yadav
2)Khimanshu Sharma

(57) Abstract :
The invention provides an Internet of Things based real-time environmental monitoring and predictive analytics system designed for industrial and hazardous environments. The system integrates an ESP32 microcontroller configured to acquire environmental sensor data including gas concentration, humidity, and additional parameters, and a Flask-based server for receiving, validating, and processing the transmitted data. A MongoDB database stores time-stamped environmental records, enabling long-term trend analysis. Power BI dashboards offer interactive real-time visualization for remote stakeholders. Machine learning models are implemented to predict environmental trends, detect anomalies, and generate early warnings of potential hazards. The system supports scalable integration of additional sensors such as temperature, pressure, vibration, and toxic gas modules, thereby enabling continuous environmental intelligence, remote accessibility, and proactive hazard mitigation across diverse industrial applications.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134125 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Five-Factor Sustainability Framework for Estimating Student Satisfaction

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr Tanushree Sharma
2)Dr David Campbell

(57) Abstract :
The present invention relates to a novel analytical method with predicting student satisfaction in higher education. The method integrates five dimensions, i.e., ‘Academic & Career Sustainability’, ‘Teaching and Learning’, ‘Support Facilities’, ‘Green & Eco-friendly Campus’, and ‘Well Being & Social Sustainability’; to estimate the Student Satisfaction. The constructs are identified by taking semi structured interviews from university students. The invention introduces a systematic framework that quantifies relationships among academic, administrative and infrastructural and elements using structural equation modelling technique. The model provides institutions with an evidence-based approach to evaluate service delivery, identify improvement areas and optimize student experience. This method provides an automated, replicable and institution-scalable mechanism to predict satisfaction, generate actionable insights, and support institutional decision-making.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134145 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Wavero-The Console Table

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Mr. Ningthoujam Tondonsana Singh
2)Tushita Sethi
3)Purva Sharda
4)Chirag Aggarwal

(57) Abstract :
The present invention relates to a modern console table with a parametric façade made of modular wooden strands, creating a rhythmic wave-like pattern that adds depth and visual interest. The console table comprises a parametric façade, smooth push-to-open drawers, and tapered legs with brass caps. The smooth, handle-free push-to-open drawers seamlessly integrated to maintain a clean, uninterrupted surface. Constructed from high-quality layered plywood with a durable laminate finish, it offers both strength and longevity, while the slightly projected top panel conceals drawer edges, emphasizing its minimalist design. Elegantly tapered legs with brass accents provide stability and refined detailing. The compact and versatile design of the console table makes it suitable for residential, commercial, and hospitality interiors. Its modular construction enables efficient fabrication, easy replacement, and simplified maintenance, offering an adaptable and visually striking furniture solution for modern interior environments.

No. of Pages : 10 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134148 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : OPEN CELL POROUS LATTICE STRUCTURE AND METHOD FOR PRODUCING THE OPEN CELL POROUS LATTICE STRUCTURE

(51) International classification	:A61L27/56, A61F2/28, G01N15/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)KALYANASUNDARAM, Dinesh
2)SHARMA, Ashish

(57) Abstract :
An open-cell pore lattice structure (100) and a method (500) for producing the open cell porous lattice structure (100) are disclosed. The open-cell pore lattice structure (100) comprises a periodic or quasi periodic architecture defined by a mathematical equation in spatial coordinates x, y, z, wherein, the equation comprises trigonometric functions of x, y, and z with selected coefficients and frequencies, such that the resulting structure exhibits interconnected pores throughout its volume; and the open-cell pore lattice structure (100) comprises a porosity and anisotropic mechanical properties selected to approximate biomechanical properties of target bone tissue.

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134155 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM FOR REAL-TIME MULTI-VEHICLE COOPERATION USING AN EDGE-FOG FEDERATED PERCEPTION NETWORK

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Rishika Singh
3)Bhawana Sharma

(57) Abstract :
The present invention relates to a system for real-time multi-vehicle cooperation using an edge-fog federated perception network. The system comprises an edge tier including a plurality of vehicles, each equipped with one or more sensors and an onboard processing unit configured to generate local perception data. The local perception data is abstracted into compact spatiotemporal perception vectors, which are transmitted to one or more fog nodes through vehicular communication links. The fog nodes perform federated fusion of perception vectors received from multiple vehicles to generate a local dynamic environmental model representing a unified view of the surrounding environment without exchanging raw sensor data. The fog nodes further compute local model updates based on the fused perception data. A cloud tier coordinates a federated learning process by aggregating model updates received from the fog nodes to generate an updated global perception model in a privacy-preserving manner. The updated global perception model is distributed back to the vehicles through the fog nodes to enhance onboard perception capabilities.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133801 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE URINATION MANAGEMENT DEVICE

(51) International classification	:E03D 13/00, G01N 33/493, A61G 9/00, H04W 88/18, G16H 40/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Sakshi Tomar

(57) Abstract :
A portable urination management device, comprises of a wearable body 101 developed to be worn around a user's waist portion with a pair of straps 102 for securing body 101, a plurality of strain sensors for continuously detecting user's waist circumference and variations in tension of the strap 102, an inbuilt microcontroller configured to process signals from strain sensors and actuate a pair of motorized rollers 103 to automatically adjust straps 102 for providing an optimal and secure fit, a foldable urine-catching capsule 104 connected through a flexible drainage conduit 105 to a detachable urine collection bag 106, a segmented pneumatic pad 107 with integrated moisture and pressure sensors for detecting leakage and maintaining comfortable contact while stabilizing capsule 104, a flow sensor for detecting urine flow initiation and cessation, a set of sensors 108 for monitoring urine characteristics, and a sterilization module 109 for automatic sterilization and hygiene maintenance.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133826 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMOG MITIGATION DEVICE WITH ADAPTIVE AIR FILTRATION

(51) International classification	:H01J 5/03, H01J 29/87, B22F 12/60, G21K 1/10, B41B 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Gazal Sharma
2)Gaurav Katoch
3)Shalini Arora
4)Maninder Singh
5)Supriya
6)Monika Pandit
7)Shivani Rani

(57) Abstract :
A smog mitigation device with adaptive air filtration comprising a cuboidal structure 101 mounted with a stretchable sheet 102 forming a conical roof, vertical plates 103 employing kite assembly 5c 104 for lateral expansion, and a cylinder-driven automated door 105 for access, structure 101 integrates PM2.5, PM10, CO_2, NO_2, humidity, and VOC sensors for continuous monitoring, automated windows 113 with CO_2 and ultrasonic anemometer sensors operate via a swing-slide assembly, an ion-release module with negative-ion generator and micro-ionizing emitter enhances air quality, protective covering with spherical scissor assembly 106 and fire-resistant sheet ensures safety, automated spray arrangement with reservoir 109, peristaltic pump, and nozzle 110 dispenses neutralizer solution, soundproof arrangement with acoustic panels 206 and sensor reduces noise, magnetic side-latching expansion ports 205 enable modular connectivity, compartments 204 store emergency equipment, and a processing module to manage adaptive operations through a user interface.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133841 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Wearable Optical Text Recognition and Speech Output System Embedded in Eyeglasses for Blind Reading Assistance

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Pawan Bhambu
2)Dr. Narayan Singh
3)Dr. Himanshu Sharma
4)Dr. Prashant Sharma
5)Dr. Amit Sharma

(57) Abstract :
The present invention relates to an intelligent wearable assistive system designed to enable blind and visually impaired individuals to read printed text independently. The proposed system is embedded within a pair of eyeglasses and integrates an optical image capture unit, an optical character recognition (OCR) module, and a speech synthesis unit. The system captures printed text from books or documents in real time, converts the visual content into machine-readable text, and outputs the corresponding audio through an integrated speaker or earphone interface. The invention provides hands-free operation, real-time feedback, portability, and accessibility without reliance on external computing devices. This system significantly enhances reading independence, educational access, and quality of life for visually impaired users.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133342 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART IRRIGATION AND RAINWATER-MANAGEMENT SYSTEM FOR HILLY AND WATER-SCARCE AGRICULTURAL TERRAINS

(51) International classification	:F24T 50/00, B60T 13/72, B61L 27/02, B60T 13/46, H02S 10/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Vaibhav Kumar Singh
4)Yash Goel
5)Vihaan Kaushik
6)Shivam Kumar Tiwari
7)Piyush Sharma
8)Archana

(57) Abstract :
The present invention discloses a smart irrigation and rainwater-management system engineered for hilly and water-scarce agricultural regions. The system integrates distributed IoT-based sensing units, an ESP32 microcontroller, a self-learning artificial-intelligence prediction engine, a hybrid cloud-edge connectivity framework, and an automated pump-and-valve actuation assembly. Real-time measurements of soil moisture, soil pH, atmospheric conditions, and rainwater-tank levels are analyzed to generate predictive irrigation schedules optimized for uneven terrain. The system autonomously regulates water distribution using AI-derived decisions, prevents pump dry-running through continuous tank-level validation, and remains fully operational during connectivity disruptions via on-device edge inference. A mobile and web dashboard provides live monitoring, alerts, analytics, and manual control options. The invention delivers a low-cost, terrain-adaptive, and sustainable irrigation ecosystem that enhances water efficiency, supports climate-resilient agriculture, and enables reliable use of harvested rainwater in challenging topographies.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133343 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN COMMUNICATION ENHANCEMENT SYSTEM FOR REAL-TIME SPOKEN LANGUAGE ANALYSIS AND PERSONALIZED FLUENCY IMPROVEMENT

(51) International classification	:A61P 25/28, C04B 14/44, C04B 16/10, B60W 20/19, E21B 43/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Manu Singh
3)Janhvi Gupta
4)Prakhar Srivastava
5)Hitarth Gupta

(57) Abstract :
The invention provides an AI-driven communication enhancement system designed to analyze, interpret, and improve spoken language performance through real-time speech processing. The system integrates speech recognition, natural language processing, machine learning, and adaptive learning frameworks to evaluate pronunciation, fluency, tone, sentiment, and semantic correctness. Raw speech inputs are preprocessed to remove noise and extract acoustic features, which are then analyzed through intelligent models trained on diverse linguistic datasets. The system automatically interprets user speech, compares performance across sessions, identifies errors, and delivers personalized feedback through visual and interactive interfaces. An adaptive learning engine dynamically modifies exercises based on user proficiency, while interactive dashboards display pronunciation accuracy, fluency trends, and emotional tone analytics. The system is deployable across cloud and edge environments, enabling scalable, real-time communication enhancement for learners, professionals, and organizational training programs. The invention provides a comprehensive AI-based solution for improving spoken communication skills in a self-paced and data-driven learning environment.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133344 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-ENABLED SYSTEM FOR AUTOMATED RESUME STRUCTURING, ATS SCORING, SKILL GAP ANALYTICS, AND CREDIBILITY VERIFICATION

(51) International classification	:G06F 17/30, G06F 17/27, G06F 17/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Mayank Goswami
3)Faizan Akhtar
4)Murli Rathi

(57) Abstract :
The invention discloses an AI-enabled, web-based system for generating, evaluating, optimizing, and verifying professional resumes for students and job seekers. The system receives structured user input and processes it through a formatting intelligence engine configured to generate an ATS-compliant, machine-readable resume. An explainable ATS scoring engine evaluates the resume and produces transparent, section-wise reasoning of factors influencing shortlisting probability. A counterfactual rewrite suggestion engine identifies content improvements and predicts score gains prior to implementing modifications. A skill gap analytics and career recommendation module compares user skills with market-driven job role requirements and suggests targeted learning pathways. A credibility and fake-claim detection subsystem verifies projects, skills, and certifications using publicly available metadata to generate a trust score. The system further supports multi-version resume management through secure cloud storage. The invention enhances selection chances, reduces recruiter validation effort, and provides a transparent, growth-oriented platform for continuous career development.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133722 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS COOKING ASSISTIVE DEVICE

(51) International classification	:F24C15/08, F24C15/12, F24C15/18, G06V10/82, B65G47/90, A47J44/00, A47J43/07
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Sumit Chopra
3)Harkaran Singh

(57) Abstract :
An autonomous cooking assistive device comprising a body 101 configured to accommodate a gas stove, multiple telescopic rods 102 arranged around bottom periphery of body 101 and connected to a laser sensor for detecting a user's height and adjusting height of body 101, a set of pneumatic plates 103 positioned along bottom periphery of body 101 to securely hold gas stove upon detection, a frame 104 mounted on body 101 and integrated with a motorized vertical slider 105, multiple extendable poles 106 mounted on slider 105 with insulated holding members 107 and suction units attached for gripping and relocating utensils placed on gas stove, a camera 108 installed on body 101 for capturing real-time cooking visuals, articulated arms 109 connected to rotatable grippers 110 for interacting with burner knobs, a pneumatic link 111 connected to a circular unit 113 with spice compartments, a gun barrel dispensing arrangement 114 coupled to each compartment for spice dispensing.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133723 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CLASSROOM SYSTEM FOR AUTOMATED EXAM MANAGEMENT

(51) International classification	:G06Q 10/10, F24T 50/00, B60T 13/72, B61L 27/02, B60T 13/46
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)Jasmeet Kaur

(57) Abstract :
A classroom system for automated exam management, comprising a plurality of seating and work surface units, including a bench 101 and a desk 102 developed to be mounted on grids of sliders 103 embedded at a base surface of a classroom 104, a paper handling arrangement integrated with an invigilator's desk 201 to securely scan and open sealed envelopes containing examination materials, a paper dispensing arrangement integrated with student desk(s) to identify students and dispense specific types of paper, a labelling arrangement to automate the placement and inscription of student information on slips, multiple imaging units 315 and microphones 316 for detecting and recording suspicious student activity during exams, two flaps 317 restrict external visibility upon detecting the suspicious activity, and a slip removal arrangement automatically eliminate student identification slips after exam completion.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133724 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : KITCHEN AIRFLOW REGULATION AND PURIFICATION DEVICE

(51) International classification	:F24C15/20, F24F7/003, F24F7/00, F24F8/95, F04D25/08, H04N23/21, F04D25/10, F04D29/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Sonal Dhanjal
4)Aastha
5)Lalita
6)Rajwinder Kaur
7)Simran Kaur Sandal

(57) Abstract :
A kitchen airflow regulation and purification device, comprises of a body 101 constructed with a circular frame 102 mounted atop a vertical support 103 and a mobile base 104, a set of motorized wheels 109 for autonomous movement, a camera 110 integrated with an NIR sensor for analysing occupancy, individual count and facial expressions, a motorized fan 111 centrally installed in the circular frame 102 coupled with an RPM sensor for automatic speed adjustment, a pair of vertical airflow-directing flaps 112 mounted using motorized hinge joints 113 for focusing air direction, an air purification module 114 to purify circulated air, a humidity control module 115 to regulate moisture level, an odor neutralization module 116 to purify incoming air, a pair of mechanical sleeves 117 supporting an extendable pole 118 with a roller 119 holding a cover sheet 120, an electromagnet 121 to secure the frame 102.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133725 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SELF-MAINTAINING NOTICE BOARD SYSTEM

(51) International classification	:G09F 15/00, B64U 20/80, B22C 21/06, A63C 17/01, A63F 3/02	(71)**Name of Applicant :** **1)GNA University** Address of Applicant :Sri Hargobindgarh, Phagwara-Hoshiarpur Road, Phagwara, Punjab 144401, India. Phagwara Punjab India (72)**Name of Inventor :** **1)Er. Gagandeep Singh** **2)Dr. Sumit Chopra** **3)Gurprince Singh**
(31) Priority Document No	:NA	**4)Vivek Mahey**
(32) Priority Date	:NA	**5)Karanjit Singh**
(33) Name of priority country	:NA	**6)Rajeev Anand**
(86) International Application No Filing Date	: :01/01/1900	**7)Bhoomi Gupta** **8)Lalit Banger**
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
A self-maintaining notice board system is comprising, a rectangular transparent board 101 is mounted on a vertically expandable rod 102 to adjust its height, the board 101 surface is divided into multiple segments, each dedicated to specific notice categories and embedded with LEDs 103 to highlight priority or urgency, a built-in mini printer 108 to print notices, a built-in camera 111 detects debris accumulation, an integrated microphone 116 and speaker 117 enable audio interactions, an authentication module 104 features a biometric sensor locking door assembly 104b allowing only authorized personnel, a notice handling module 105 uses a clamp 105a on a horizontal slider 105b with a hydraulic bar 105c and motorized ball-and-socket joint 105d, a notice attachment and retrieval module 106 employs pins 106b, electromagnetic spring 106c , and clamp 106d to manage notices safely, an automated cleaning module 109 and dust cleaning module 112 maintain the board's cleanliness.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133345 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOLAR-POWERED AIR PURIFICATION SYSTEM WITH INTEGRATED REAL-TIME AIR QUALITY MONITORING MODULE

(51) International classification	:C09F 1/02, C07C 209/84, C07D 201/16, C07C 227/40, C07C 231/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Sarthak Singh
4)Udanshu
5)Vikash Kumar Mishra
6)Prof.(Dr.) Kimmi Verma

(57) Abstract :
The invention discloses a solar-powered air purification system integrated with a real-time air quality monitoring module to deliver autonomous, sustainable, and intelligent environmental management. The system comprises a photovoltaic panel configured to harvest solar energy, a power storage unit for continuous operation, and a purification assembly that filters airborne pollutants through a multi-stage filtration pathway. An embedded air quality monitoring module detects particulate concentrations including PM2.5 and PM10, along with environmental parameters such as temperature and humidity. A processor analyzes sensor data and dynamically adjusts purification intensity based on detected air quality conditions. The system presents real-time data to users through a digital display or wireless connectivity. By coupling renewable energy utilization with adaptive purification and intelligent environmental sensing, the invention provides an eco-friendly, self-sustaining air purification solution suitable for indoor, outdoor, and semi-outdoor environments.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133346 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-ENABLED REAL-TIME FOOD REDISTRIBUTION SYSTEM CONNECTING FOOD PROVIDERS WITH NON-GOVERNMENTAL ORGANIZATIONS

(51) International classification	:A23L 5/40, B01F 101/18, A23L 5/10, A23L 29/00, A23L 35/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Sada Aizaz
3)Sahil Srivastava
4)Vivek Yadav

(57) Abstract :
The present invention relates to an AI-enabled real-time food redistribution system that connects food providers with non-governmental organizations to minimize food waste and improve access to surplus edible resources. The system includes a donor interface through which restaurants and food outlets upload information regarding surplus food, a receiver interface accessible to NGOs, an artificial intelligence engine that evaluates food characteristics, quantity, donor location, shelf life, and logistical feasibility, and a communication module that generates automated notifications. Based on the evaluation, the artificial intelligence engine recommends the most suitable NGO for timely retrieval of the surplus food. The system incorporates geolocation mapping, route prediction, real-time tracking, and a cloud-based data management layer for storing transaction history and generating sustainability analytics. By providing automated matching, rapid communication, and transparent operational workflows, the invention offers an efficient technological mechanism for preventing wastage and ensuring that edible food is delivered promptly to communities in need.
No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133347 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE SYSTEM FOR REAL-TIME CARBON EMISSION DETECTION, PARTICULATE CARBON CAPTURE, AND CARBON REUTILIZATION

(51) International classification	:C09C 1/44, D01F 11/10, B01J 27/232, B01J 21/18, C07C 5/09
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Satyam Mishra
3)Shagun Tyagi
4)Yash Chakerverti
5)Prof.(Dr.) Kimmi Verma

(57) Abstract :
The invention discloses an IoT-enabled portable carbon capture and utilization unit designed for detecting, capturing, and repurposing carbon emissions at a micro and decentralized scale. The system integrates an ESP32 microcontroller with MQ-series gas sensors, including MQ-7 and MQ-135, for real-time monitoring of carbon monoxide and carbon dioxide levels through cloud-based dashboards. An airflow chamber equipped with a natural cotton filtration medium captures carbon particles from ambient air drawn into the device. The cotton filter traps carbon in an eco-friendly and cost-efficient manner, enabling users to extract and repurpose the collected carbon for applications such as marker ink production and battery electrode preparation. The system provides continuous monitoring, data visualization, threshold-based alerts, and portable deployment capability. By combining embedded electronics, IoT connectivity, sustainable filtration materials, and carbon reutilization, the invention presents an accessible, low-cost, and circular-economy-oriented solution for reducing local carbon emissions and enhancing environmental awareness.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131980 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE TRAFFIC INTERSECTION SYSTEM FOR AUTOMATIC CONVERSION BETWEEN SIGNALIZED CONTROL AND ROUNDABOUT MODE BASED ON REAL-TIME TRAFFIC VOLUME

(51) International classification	:G08G 1/07, G08G 1/081, G08G 1/08, G08G 1/01, G08G 1/0967
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
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2)Er Devender
3)Mr. Vivek Kumar Thahiya

(57) Abstract :
[036] An adaptive traffic intersection system that automatically switches between signal-controlled mode and roundabout mode based on real-time traffic density is disclosed. The system includes IoT-enabled vehicle detection sensors, an AI-based control unit, adaptive LED signaling indicators, and a physical lane reconfiguration mechanism comprising retractable dividers and movable barriers. During low traffic conditions, the system transforms the intersection into a roundabout configuration to allow continuous vehicle flow, while in high traffic conditions, it reverts to conventional signalized control. This hybrid approach reduces vehicle idle time, minimizes fuel consumption, lowers emissions, and enhances overall traffic efficiency and safety. The system can be integrated with smart city infrastructure, supports sustainable energy operation, and provides failsafe mechanisms for secure operation under all conditions. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131981 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE MULTI-HORIZON ENERGY DEMAND FORECASTING FRAMEWORK INTEGRATING REAL-TIME DATA FUSION, HYBRID MACHINE-LEARNING PREDICTION, AND AUTONOMOUS REINFORCEMENT-BASED MODEL OPTIMIZATION

(51) International classification	:G05B 13/04, G06N 3/08, G06N 20/00, G06N 3/04, G01W 1/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)Prof. (Dr.) Poonam Panwar

(57) Abstract :
045] The present invention discloses an adaptive multi-horizon energy-demand forecasting system that integrates real-time heterogeneous data acquisition, automated preprocessing and feature engineering, hybrid machine-learning and statistical prediction models, and an autonomous feedback controller supported by reinforcement learning. The system processes weather data, IoT-meter readings, industrial load measurements, grid-sensor inputs, renewable-generation profiles, and historical datasets to generate high-quality predictive features used by a coordinated deep-learning and statistical forecasting engine. A dynamic weighted fusion mechanism combines predictive outputs, while the adaptive controller continuously evaluates accuracy, updates parameters, and performs selective retraining to counter concept drift and fluctuating consumption patterns. A multi-horizon prediction layer delivers deterministic forecasts, probabilistic intervals, and anomaly indicators across time ranges from seconds to months. The invention provides a unified, scalable, and self-optimizing forecasting framework suitable for utility grids, industrial energy systems, renewable integration, and smart-city operations. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131982 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REMOTE-CONTROLLED HAPTIC FEEDBACK AND ENVIRONMENTAL INTERACTION SYSTEM FOR PET OWNERS AND THEIR ANIMALS

(51) International classification	:A01K 29/00, A01K 27/00, G06F 3/01, A01K 15/02, A61B 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)Prof. (Dr.) Poonam Panwar
2)Ms. Shapali Bansal

(57) Abstract :
[038] The present invention relates to a remote-controlled haptic feedback and environmental interaction system for pets and their owners, designed to enhance emotional bonding, health monitoring, and behavioural guidance. The system integrates a wearable smart collar and an intelligent pet home, both equipped with sensors, AI modules, haptic actuators, holographic projection units, fragrance dispensers, and interactive play mechanisms. The wearable collar monitors the pet's vital signs, activity, and mood, while providing tactile, visual, auditory, and olfactory feedback to simulate the owner's presence. The pet home features robotic arms for touch simulation, automated feeding systems, movable panels, and AI-assisted behavioural monitoring. The system enables real-time remote communication, reduces separation anxiety, promotes physical and mental stimulation, and ensures overall well-being of pets, providing a comprehensive solution that surpasses conventional pet-care technologies. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025

(21) Application No.202511134000 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Formulation Development and Characterization of a Nanoemulgel for Enhanced Percutaneous Delivery of Ketoprofen

(51) International classification	:A61P29/00, A61K31/12, A61K47/44, A61K9/06, B82Y5/00, B82Y30/00, B82Y40/00, A61K9/107
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to the formulation development and characterization of a nanoemulgel for enhanced percutaneous delivery of ketoprofen. The nanoemulgel comprises ketoprofen incorporated into a nanoemulsion system stabilized by a suitable oil phase, surfactant, and co-surfactant, which is subsequently embedded within a gel matrix to form a semisolid topical formulation. The invention improves solubility, skin permeation, and localized bioavailability of ketoprofen while providing sustained drug release and enhanced stability. The developed nanoemulgel demonstrates superior physicochemical properties, improved in vitro release, and enhanced ex vivo skin permeation compared to conventional topical formulations, thereby reducing systemic side effects and improving patient compliance in the treatment of pain and inflammatory conditions. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025

(21) Application No.202511134010 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD FOR MANUFACTURING DECOMPOSABLE UTENSIL FROM SWEET LIME PEELS

(51) International classification	:A47J 45/02, A47J 45/10, B27M 3/26, A24F 42/80, A24F 40/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Divya Sanghi
3)Priya Bansal
4)Ojhal Sharma

(57) Abstract :
A method (500) for manufacturing a decomposable utensil (100) from sweet lime peels is disclosed. The method (500) comprising steps of obtaining a fine powder by preprocessing sweet lime peels; autoclaving the fine powder, using an autoclave (208), at a first temperature and a first pressure for a first time duration with a buffer break; mixing 5% (v/w) polyvinyl alcohol (PVA) solution into the autoclaved fine powder in a ratio ranging from 1:1 to 1:2 to obtain a dough; molding the dough into a required shape of cutlery using a mold (210); baking the molded dough, in the autoclave (208), at a second temperature for a preset time range; and obtaining the decomposable utensil (100) upon cooling of the baked dough. The method (500) utilizes discarded sweet lime peels, converting agricultural waste into a valuable product, thereby reducing landfill pressure and promoting sustainable waste management. Claims: 10, Figures: 8 Figure 5 is selected.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134011 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEVICE FOR PROMOTING CALMNESS IN SUBJECT

(51) International classification	:F22D 7/00, H01P 1/163, F23C 10/14, F23C 10/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Sumit Bhateja

(57) Abstract :
A device (100) for promoting calmness in a subject is disclosed. The device (100) comprises a sensor unit (102) to detect physiological parameters associated with an emotional state of the subject. The device (100) further comprises a processing unit (104). The device (100) is configured to receive the detected physiological parameters from the sensor unit (102); plot the received physiological parameters on a graph; overlay the plotted graph over a benchmark graph; flag an instance as cognitive discomfort, when the plotted graph deviates from the benchmark graph; extrapolate a type of the cognitive discomfort based on an outline of the plotted graph versus the benchmark graph; and activate a control unit (202) to dynamically adjust environmental stimuli. The device (100) continuously monitors physiological and emotional cues to adapt environmental stimuli in real time, such that therapeutic responses are precisely aligned with the patient's current emotional state. Claims: 10, Figures: 5 Figure 1 is selected.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133035 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DATA-DRIVEN DIGITAL TWIN FRAMEWORK FOR A SINGLE-STAGE THREE-PHASE GRID-CONNECTED PHOTOVOLTAIC INVERTER SYSTEM AND METHOD THEREOF

(51) International classification	:H02J103/35, H02J3/38, H02M7/42, G06Q50/06, G06F113/04, H02J101/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention presents a data-driven Digital Twin framework for single-stage three-phase grid-connected photovoltaic inverters, enabling real-time reconstruction of switching-level responses and internal electrical states from operational measurements. The system integrates a Noise-Shaped DC-Elimination (NS-DCE) filter to extract clean fundamental components under harmonics, imbalance, and DC offset, and an Analytic Frequency-Controlled Current Tracking (AFCTC) method to emulate accurate current-regulation behavior under dynamic grid conditions. Internal states—including inductor currents, capacitor voltages, and switching-node dynamics—are estimated using an Echo State Network Surrogate (ESN) trained on nonlinear temporal relationships. These states support continuous parameter estimation of ageing-sensitive components such as inductance, capacitance, ESR, and switching resistance. A Remaining Useful Health (RUH) formulation evaluates degradation trends and operational margins relative to performance thresholds. Experimental validation confirms high fidelity and reliable degradation tracking, establishing a robust, scalable solution for predictive maintenance and long-term PV system reliability.

No. of Pages : 30 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133049 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MAGNETIC RESONANCE IMAGE ANALYSIS SYSTEM

(51) International classification	:G06T 7/00, G06T 7/80, G06T 7/20, G06T 7/40, G06T 7/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)MOKARA PRANEETHA
3)MAMTA NARWARIA
4)RENU MISHRA

(57) Abstract :
The present disclosure provides a magnetic resonance image analysis system comprising a magnetic resonance imaging machine generating multi-dimensional magnetic resonance image data arranged as volumetric image data and a server communicatively coupled to the magnetic resonance imaging machine. The server receives the magnetic resonance image data, normalizes pixel intensity values, excludes corrupted image portions, and partitions volumetric image data into sub-image units having predetermined spatial dimensions. Synthesized magnetic resonance image data is generated through adversarial training between an image generation structure and an image evaluation structure. A combination of original and synthesized magnetic resonance image data is processed to produce a segmented volumetric representation comprising pixel-level classification regions. An output comprising magnetic resonance image representations, the segmented volumetric representation, and a spatial attribution representation is generated and displayed at a computing device. Fig. 1 Dated December 29, 2025 Kumar Tushar Srivastava IN/PA-3973 Agent for the Applicant
No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2025
(21) Application No.202511133068 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Grooved Pier for Scour Protection

(51) International classification	:A47L 13/34, A47L 13/44, A47L 13/58, A47L 13/46
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Simran
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8)Dr. D.V.S. Verma

(57) Abstract :
The invention relates to a cylindrical bridge pier (200) equipped with a plurality of circumferential grooves (204) formed along its outer surface for reducing local scour under flowing-water conditions. The grooves (204) are configured to disrupt near-bed flow (206), weaken formation of horseshoe vortices, and reduce sediment-erosion intensity at the pier foundation. The grooves extend fully around the pier circumference and are dimensioned relative to the pier diameter, including a groove depth (208) of 0.43D, a groove thickness (210) of 0.16D, and a groove spacing (212) of 0.24D. Alternative embodiments include uniform groove geometries optimized for site-specific hydraulic conditions, as well as retrofit configurations using prefabricated grooved jackets. Flume experiments demonstrate that the grooved pier achieves up to a 63% reduction in maximum scour depth compared to a plain circular pier under identical hydraulic conditions. The invention provides a simple, durable, and maintenance-free solution to enhance the stability and service life of bridges exposed to riverine and open-channel flows. Figure 2(a)-2(b)

No. of Pages : 25 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134012 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD FOR MANUFACTURING DECOMPOSABLE TABLEWARE FROM WATERMELON RINDS

(51) International classification	:A24F 42/80, A24F 40/70, B42D 25/40, A01J 15/00, A42C 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Muskan Gupta
2)Divya Sanghi
3)Priya Bansal
4)Ojhal Sharma

(57) Abstract :
A method (400) for manufacturing a decomposable tableware (100) from watermelon rinds is disclosed. The method (400) comprising steps of obtaining a fine powder by preprocessing watermelon rinds; autoclaving the fine powder, using an autoclave (208), at a first temperature and a first pressure for a first time duration with a buffer break; mixing 5% (v/w) polyvinyl alcohol (PVA) solution into the autoclaved fine powder in a ratio ranging from 1:1 to 1:3 to obtain a dough; molding the dough into a required shape of cutlery using a mold (210); baking the molded dough, in the autoclave (208), at a second temperature for a preset time range; and obtaining the decomposable tableware (100) upon cooling of the baked dough. The method (400) utilizes discarded watermelon rinds, converting agricultural waste into a valuable product, thereby reducing landfill pressure and promoting sustainable waste management. Claims: 10, Figures: 4 Figure 4 is selected.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134041 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BARCODE SCANNING SYSTEM AND METHOD THEREOF

(51) International classification	:G02B 26/10, G01V 8/18, G01V 8/26, G08B 13/194, H04N 3/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Dr. Vikas Upadhyaya

(57) Abstract :
Disclosed is a barcode scanning system (100) comprising an imaging unit (102), a processor (104), and a storage unit (106). The imaging unit (102) is configured to capture one or more images such that each image of the one or more images comprising a barcode format. The processor (104) performs one or more image enhancement techniques on the one or more images, decodes the barcode format associated with each image of the one or more images, determines a type of at least one transaction corresponding to an input provided by a user, and updates, based on the type of the at least one transaction, one or more inventory records associated with an inventory, wherein the one or more inventory records are updated by one of, incrementing or decrementing stock levels upon sale events. The storage unit (106) stores product data associated with the barcode format of each image of the one or more images. FIG. 1 is the reference figure.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134044 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TRANSITION-METAL-FREE AND STEREOSELECTIVE SYNTHESIS OF (E)-S-VINYL DITHIOCARBAMATES

(51) International classification	:A61K 31/00, A61K 31/33, A61K 31/395, C07C321/00, C07C323/11, C07C323/14, C07C 319/00, A61K 31/435
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)SUSHANTA KUMAR PARIDA

(57) Abstract :
The present invention provides a novel, stereoselective, and environmentally benign synthetic protocol for the preparation of E-selective S-vinyl dithiocarbamates. The process is characterized by its one-pot, multicomponent nature, metal- and base-free conditions, high atom economy, and operational simplicity. It enables the efficient formation of Csp^2–S bonds in a stereocontrolled manner, facilitates access to structurally diverse and complex molecular scaffolds, and allows the construction of libraries of APIs. The method combines sustainability, cost-efficiency, and reproducibility, making it a powerful tool for both laboratory-scale and industrial-scale synthesis of biologically and industrially significant S-vinyl dithiocarbamate derivatives.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134054 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CULTURAL ASSIMILATION ASSESSMENT SYSTEM AND METHOD THEREOF

(51) International classification	:G06F 21/57, H01M 8/04313, G16H 50/30, F24T 50/00, B60T 13/72
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)MUPPAVARAM ADITHYA SRINIVAS
(72)**Name of Inventor :**
1)DR. CHANDAN MEDATWAL
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(57) Abstract :
Disclosed is a cultural assimilation assessment system (100) that includes a data collecting unit (102) and a processor (104). The data collecting unit (102) is configured to receive one or more responses to a plurality of cultural assessment items. The processor (104) is configured to map the one or more responses with a plurality of cultural parameters; apply at least one scoring technique that normalizes scores when at least one response from the one or more responses is missing, wherein the normalization of the scores facilitates to generate a cultural assimilation score; and generate a cultural assimilation pyramid (300) comprising a plurality of hierarchical levels based on the cultural assimilation score. FIG. 1 is the reference figure.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133348 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BIODEGRADABLE COMPOSITE MATERIAL REINFORCED WITH FIBERS EXTRACTED FROM CARISSA CARANDAS STEM BIOMASS

(51) International classification	:B29K 295/00, B29K 303/00, B29K 309/00, C04B 32/02, C08J 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
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2)Mudit Saxena
3)Arpita Johri

(57) Abstract :
The invention concerns the composite biodegradable biomaterials fortified with biofibers derived from the stem of the Carissa Carandas woody plant. The biomass undergoes a process of mechanical fiber extraction and alkaline delignification to obtain the cellulose base fiber, which can be treated (surface) to allow better compatibility with the epoxy matrix. The biofibers are uniformly differentiated into the resin which is molded into a lightweight, and durable as well as environmentally friendly composite. The obtained composite improves the tensile strength and stiffness with thermal stability while recycling agricultural waste. Thus the invention substitutes the composite of synthetic fibers with a sustainable option, and is applicable to the automotive, construction, and consumer product industry.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133349 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BIODEGRADABLE COMPOSITE MATERIAL REINFORCED WITH FIBRES EXTRACTED FROM HIBISCUS ROSA-SINENSIS STEM BIOMASS

(51) International classification	:B29K 295/00, B29K 303/00, B29K 309/00, C04B 32/02, C08J 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to a biodegradable composite material reinforced with natural fibers extracted from the woody stems of Hibiscus rosa-sinensis. The process includes alkali delignification, mechanical separation of cellulose-rich fibers, and optional surface modification to enhance compatibility with an epoxy resin matrix. The fibers are uniformly dispersed within the resin to produce a lightweight, durable, and eco-friendly composite exhibiting enhanced tensile strength, stiffness, and thermal stability. The material utilizes agricultural waste biomass, providing a sustainable alternative to synthetic fiber-reinforced plastics. The composite is suitable for automotive components, construction materials, consumer products, and other environmentally responsible applications.

No. of Pages : 10 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133351 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND EVALUATION OF OMEPRAZOLE-LOADED FLOATING MUCOADHESIVE MICROSPHERES FOR SUSTAINED ANTI-ULCER THERAPY

(51) International classification	:A61K9/50, A61P1/04, A61K9/52, A61K31/4439, G01N30/02, G01N30/04, G01N30/16, G01N30/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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12)Mrs. Sridevi Rajendran

(57) Abstract :
The present invention relates to floating mucoadhesive microspheres containing omeprazole as active pharmaceutical ingredient designed for sustained release and prolonged gastric retention in treatment of peptic ulcers. The microspheres are formulated using hydroxypropyl methylcellulose K15M and carbopol 934P as polymeric matrix with sodium bicarbonate as gas-generating agent through ionotropic gelation method. The optimized formulation exhibits mean particle size of 245 micrometers, encapsulation efficiency of 87 percent, mucoadhesive strength of 3.8 Newtons, floating lag time of 45 seconds with buoyancy exceeding 12 hours, and sustained drug release over 12 hours following Higuchi kinetic model. Characterization studies including Fourier transform infrared spectroscopy, differential scanning calorimetry and scanning electron microscopy confirm absence of drug-polymer incompatibility and spherical morphology. In vivo pharmacodynamic evaluation in aspirin-induced ulcer model demonstrates significantly enhanced ulcer protection index of 78 percent compared to 42 percent with conventional omeprazole formulation. The microspheres provide improved therapeutic efficacy through prolonged gastric residence enabling sustained acid suppression.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134191 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Object Detection, Localisation and Classification in UAV's using Ground Control System

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a system and method for object detection, localisation and classification in UAV's using ground control system. The invention discloses a remote-processing UAV intelligence system where the aircraft acts strictly as a data gathering node, while the computational intelligence resides on the ground. Instead of embedding heavy AI hardware on the UAV, raw sensor feeds are transmitted to a high-performance Ground Control Station (GCS) through long-range telemetry, where detection, mapping, and object recognition are executed in real-time. The system comprises a UAV carrying imaging sensors, LiDAR-based depth scanning, RTK-based positioning, and long-range telemetry, while a Ground Control System (GCS) handles multi-sensor data fusion, real-time video inference, neural-network-based classification, and precise geo-spatial localization. This approach increases flight time, minimizes airborne processing limitations, reduces payload weight, and enables high-complexity AI implementation without onboard hardware constraints. The result is highly responsive aerial intelligence architecture designed for defense surveillance, autonomous search missions, live reconnaissance, wildlife monitoring, disaster assessment, and mission-critical deployment scenarios.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202511134214 A
(19) INDIA
(22) Date of filing of Application :31/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTEGRATING FINANCE, HR, AND MARKETING THROUGH BLOCKCHAIN AND CLOUD COMPUTING: A DIGITAL FRAMEWORK TO ENHANCE BRAND VALUE AND EMPLOYEE ENGAGEMENT

(51) International classification	:A61P 43/00, A61Q 90/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Arunima Mishra
4)Ajay Chaudhary
5)Punjika Rathi

(57) Abstract :
The present invention discloses a blockchain and cloud-enabled digital framework for integrating finance, human resource, and marketing operations within an enterprise. The system employs a permissioned blockchain to ensure secure, tamper-proof storage of financial transactions, employee performance data, and marketing analytics. Smart contracts automate incentive distribution and performance validation, thereby enhancing employee engagement and organizational transparency. A cloud-based analytics engine correlates verified enterprise data to dynamically assess brand value and operational efficiency. The proposed framework improves trust, decision-making accuracy, and alignment between employee contributions and brand growth, making it suitable for modern digitally transformed enterprises.

No. of Pages : 13 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134228 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IoT-Based Smart Monitoring System for Resource Optimization in Sugar Mills

(51) International classification	:G05B 19/4063, B60W 50/04, G08B 29/02, E21B 47/009, B60T 17/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Ashu Saini
4)Mr. Wasik Iqbal
5)Mr. Parveen Kumar

(57) Abstract :
The project “IoT-Based Smart Monitoring System for Resource Optimization in Sugar Mills" aims to improve the effectiveness, sustainability, and output of sugar production processes. This project mainly focuses on creating an intelligent system which employs IoT to monitor, analyze, and optimize the usage of important resources, including water, steam, and electricity, 24/7 within a sugar mill. In the methods section, sensors enabled by IoT will be used to connect and monitor specific stages within the sugar process, such as the boiler, turbine, and processing stages, allowing real-time data collection of various parameters (e.g., temperature, pressure, motor speed, power). The data can be relayed via wireless communication protocols (e.g., MQTT or LoRaWAN) to the cloud, where it can be analyzed. The new system will utilize machine learning to assess this information for predictive maintenance, anomaly detection, and performance optimization processes. The proposed system will also include a dashboard view for the user on mobile devices and tablets (e.g., iPads) that allows for alert updating, real time visualization, and analytical insights for decision-making. The discussion for the project explains the key takeaways of the study which showed that the IoT based system transformed the operational efficiency of a sugar mill by reducing energy and water waste, facilitating predictive maintenance to eliminate production downtime, enhancing overall efficiency of resource usage, and facilitating regulatory compliance for emissions and fuel efficiency measures. This invention provides a holistic, data-driven solution for technology modernization of sugar mills. Through a combination of IoT technology and analytics, it encourages sustainability in the industrial sector while providing more real-time control, better decision-making, and lower production costs. The technology may also be adapted, restructured, and expanded to industries such as cement, textiles, and food processing to achieve further optimization and sustainability.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134256 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD AND SYSTEM FOR PREDECTIVE FAILOVER MANAGEMENT

(51) International classification	:F24T 50/00, B60T 13/72, B61L 27/02, B60T 13/46, H02S 10/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a method (300) and system (100) for predictive failover management in a hybrid network entity configured with a primary interface and a secondary interface. The invention addresses the technical problem of delayed or inefficient interface switching in dynamic wireless environments, particularly where link degradation occurs unexpectedly and leads to packet loss, latency, or communication outages. The method (300) includes receiving (302) one or more link-quality metrics from at least the primary interface, preprocessing (304) the metrics to generate feature vectors, and predicting (306), via an embedded machine-learning model, a forthcoming outage associated with the primary interface along with a confidence score. Based on the prediction and confidence score, the method (300) activates (308) the secondary interface to maintain uninterrupted connectivity. The invention is applicable to hybrid IoT devices, smart meters, industrial sensors, and mobile wireless deployments requiring reliable and predictive interface management. [To be published with FIG. 2]

No. of Pages : 64 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134258 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for AI-Based Data Analysis and Intelligent Decision Support

(51) International classification	:E21D 13/02, D21D 1/20, C21D 1/26, C21D 1/34, C12Q 1/6869
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to a system and method for AI-based solution analysis and decision support based on a framework of technically validated causal relationships that leads to technically valid and executable decisions. A processor with an attached RAM (random-access memory) is the main part of this disclosed solution, and it can acquire, validate the source and integrity of multiple sources of data, correlate the results from its analytical processes with system state parameters in real time, and create validated cause-and-effect relationships before generating a decision. Both predictive and feasibility analyses are performed based on the same set of data, and together contribute to the basis for making engineering-level decisions. In addition, the disclosed solution enforces multi-layer constraint, provides for adaptive decision simulation, and selectively authorizes or suppresses the generation of certain decision outputs based on the level of confidence in the causal relationships, extent of operational feasibility, and the level of system stability. By intentionally suppressing "unsafe" or "non-executable" decisions and creating an audit trail for all decisions made using the AI tool, the present invention converts AI from a statistical recommendation generator into a controlled, execution-aware decision authorization mechanism, which enhances the ability of intelligent decision-support systems to operate reliably, safely, and with proper governance.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134259 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CARBON-BLEND SULFUR CATHODE FOR ROOM-TEMPERATURE SODIUM-SULFUR BATTERY

(51) International classification	:H01M 4/00, H01M 4/02, H01M 4/36, H01M 4/62, H01M 4/38, H01M 4/58, H01M 4/583, C01B 32/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)CHANDRA, Mahesh
4)SONI, Chhail Bihari
5)CHANDRAN, Sanjaykumar

(57) Abstract :
The present disclosure provides a carbon-blend sulfur cathode for a room-temperature sodium-sulfur battery, comprising a composite material comprising sulfurized polyacrylonitrile, carbonized Prussian blue, and graphite, wherein the composite material comprises amorphous carbon regions and crystalline carbon regions, and wherein the crystalline carbon regions are distributed within the amorphous carbon regions. The present disclosure also provides a method of preparing a carbon-blend sulfur cathode, comprising providing a graphite-Prussian blue precursor by mixing iron (II) sulfate heptahydrate, potassium hexacyanoferrate (III), and graphite in an aqueous solution to form a precipitate, drying the precipitate to obtain a graphite-Prussian blue powder, mixing sulfur, polyacrylonitrile, and the graphite-Prussian blue powder to form a mixture, and calcining the mixture at a temperature in a range of 450°C to 750°C under an inert atmosphere to form the carbon-blend sulfur cathode.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134320 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : COMPOSITION OF NIGELLA SATIVA OIL AND METHOD THEREOF

(51) International classification	:G01N 33/28, F16N 3/04, C10N 40/10, B27K 3/48, C09F 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention discloses the use of Nigella sativa oil as a novel herbal agent for caries prevention and management. Extracted via Soxhlet solvent extraction, the oil contains thymoquinone and other bioactive compounds with strong antimicrobial properties. In vitro studies demonstrate significant inhibition zones against Streptococcus mutans, comparable to silver diamine fluoride and superior to fluoride varnish. Unlike conventional agents, the formulation does not cause tooth discoloration, making it suitable for anterior teeth and pediatric applications. The solution is prepared as a liquid, varnish, or gel, optionally combined with pharmaceutically acceptable carriers, and optimized at concentrations of 5–10% w/v. It is biocompatible, eco-friendly, and cost-effective, providing rapid microbial inhibition and improved patient compliance. The invention thus offers a safe, effective, and sustainable alternative to conventional caries-preventive agents, aligning with modern trends toward herbal and minimally invasive dentistry.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134321 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SMARTPHONE-ASSISTED PAPER SENSOR STRIPS FOR RAPID AND SIMULTANEOUS DETECTION OF CU(II), CR(VI), ZN(II), AND MN(II) IN WATER

(51) International classification	:B41J 13/24, D21F 11/16, B42D 1/10, G03C 3/02, B41J 19/28
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)SUMIT MALIK
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(57) Abstract :
The invention discloses a smartphone-assisted paper sensor strip system for rapid and simultaneous detection of copper (Cu(II)), chromium (Cr(VI)), zinc (Zn(II)), and manganese (Mn(II)) ions in water. The sensor strips are fabricated from Whatman filter papers (WFP-113 and WFP-4) with multiple detection zones impregnated with optimized chromogenic reagents, including cuprizone for Cu(II), diphenylcarbazide for Cr(VI), zincon for Zn(II), and pyridylazo-naphthol for Mn(II). Masking agents such as cyanide and cyclohexanone are incorporated to minimize cross-interference among ions. Upon exposure to target analytes, distinct colorimetric complexes are formed within one minute under optimized pH conditions, producing blue, pink, or red signals. A smartphone imaging module, coupled with a color picker application, quantifies red-green-blue (RGB) intensity values and generates calibration curves correlating color intensity with ion concentration. The system achieves detection limits below 1 mgL^{-1}, offering a portable, cost-effective, and user-friendly solution for environmental monitoring and field-based water quality assessment.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134322 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYDROTHERMAL SYNTHESIS AND ENHANCED ADSORPTION PERFORMANCE OF NI2(DHTP) METAL-ORGANIC FRAMEWORKS FOR WATER PURIFICATION

(51) International classification	:G01N 7/04, B01D 53/047, F04B 37/04, C04B 14/44, C04B 16/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)KAJAL SAINI
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(57) Abstract :
The invention discloses a hydrothermal synthesis method for Ni_2(Dhtp) metal-organic frameworks (MOFs) and their application in water purification. Ni_2(Dhtp) MOFs are synthesized using nickel acetate tetrahydrate and 2,5-dihydroxyterephthalic acid in aqueous medium under reflux, producing microcrystalline solids with high porosity and thermal stability. Characterization confirms crystallinity, mesoporosity, and Ni–O coordination. Adsorption studies demonstrate superior removal of dyes such as Eriochrome Black T and Rhodamine B, and phenolic compounds such as gallic acid and catechol. Optimization of pH, adsorbent dosage, contact time, and agitation speed reveals rapid kinetics and high removal efficiencies exceeding 90%. Isotherm modeling confirms monolayer adsorption consistent with Langmuir models, while regeneration studies validate reusability over multiple cycles. The invention provides a cost-effective, scalable, and sustainable adsorbent material with enhanced adsorption capacity, selectivity, and stability, offering a significant advancement in wastewater treatment and environmental remediation technologies.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134323 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND SPECTROSCOPIC CHARACTERIZATION OF BIOLOGICALLY ACTIVE CO(II) AND NI(II) SCHIFF BASE COMPLEXEs

(51) International classification	:G01N 21/64, G01N 21/65, G01N 33/68, G01N 33/50, G01N 33/58
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)AVINASH RANI
3)DR REENA V. SAINI
4)DR SELVA KUMAR

(57) Abstract :
The invention discloses the synthesis and characterization of cobalt(II) and nickel(II) Schiff base complexes derived from 4 bromo 2 ((5 mercapto 1,3,4 thiadiazol 2 ylimino)methyl)phenol. The complexes were prepared in a 1:2 metal-to-ligand molar ratio and characterized by elemental analysis, molar conductance, magnetic susceptibility, infrared, and UV–visible spectroscopy, confirming octahedral geometries with coordination via azomethine nitrogen and phenolic oxygen donor sites. Biological assays revealed enhanced antimicrobial and antifungal activity compared to the free ligand, with the cobalt complex showing pronounced antifungal efficacy and the nickel complex demonstrating superior antibacterial performance. Both complexes exhibited DNA cleaving activity and significant cytotoxicity against SH SY 5Y human neuroblastoma cells, with the nickel complex achieving an IC_{50} value of 39.96 µM. Computational studies using DFT and molecular docking validated the experimental findings, showing strong binding affinities with DNA and human serum albumin (HSA). The invention establishes these Schiff base complexes as promising candidates for biomedical and pharmaceutical applications.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134324 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYBRIDIZATION IMAGE CLASSIFICATION SEGMENTATION THROUGH DCNN

(51) International classification	:H01G 11/04, G06J 1/00, C07K 16/46, C07K 19/00, H01G 11/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)RITU AGGARWAL
2)ESHAAN AGGARWAL

(57) Abstract :
The invention discloses a hybridization image classification and segmentation system utilizing deep convolutional neural networks (DCNNs). The system integrates U-Net and DenseNet architectures with transfer learning, feature fusion, and bilinear interpolation upsampling to achieve high-resolution semantic segmentation. Cascaded dense blocks are employed to generate denser feature maps, while skip connections improve gradient propagation and prevent vanishing gradients. The hybridization process fuses outputs from U-Net and DenseNet, producing a unified segmentation map that balances accuracy and computational efficiency. The system computes performance metrics including pixel accuracy, mean pixel accuracy, mean intersection-over-union, precision, recall, and F1-score to validate its effectiveness. Comparative analysis demonstrates superior results compared to conventional models such as SegNet, PSPNet, and ResNet. The invention is scalable across domains including agriculture, defense, environmental monitoring, and medical imaging, providing a robust, efficient, and accurate solution for complex image classification and segmentation tasks.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134325 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LATERAL FLOW IMMUNOASSAY DEVICE FOR DETECTING APPLE STEM GROOVING VIRUS (ASGV) AND APPLE MOSAIC VIRUS (APMV)

(51) International classification	:B22F 12/60, G21K 1/10, B41B 5/04, A61F 5/445, A24F 1/26
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)ANCHAL SAINI
2)GOURAV VATS
3)YASHIKA WALIA DHIR
4)SUNNY DHIR

(57) Abstract :
The invention discloses a lateral flow immunoassay (LFIA) device for rapid, field-level detection of apple stem grooving virus (ASGV) and apple mosaic virus (ApMV). The device comprises a sample pad for receiving plant extracts, a conjugate pad impregnated with gold nanoparticle–antibody (AuNP–Ab) conjugates specific to ASGV and ApMV, a nitrocellulose membrane (NCM) incorporating a test line coated with virus-specific antibodies and a control line coated with goat anti-rabbit IgG, and an absorbent pad to maintain capillary flow. The AuNP–Ab conjugates, prepared at optimal antibody concentrations of 4–6 µg and conjugated at pH 7, generate a visible colorimetric signal upon antigen–antibody interaction. The device delivers results within minutes, producing two distinct bands for positive samples and a single control band for negatives. Storage formulations comprising bovine serum albumin (BSA) and trehalose enhance stability. The LFIA device is portable, cost-effective, and user-friendly, enabling accurate detection of ASGV and ApMV in remote apple-growing regions without laboratory infrastructure.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134326 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYNERGISTIC ANTIMICROBIAL POTENTIAL OF ACACIA NILOTICA AND MIMUSOPS ELENGI EXTRACTS AS NOVEL HERBAL ROOT CANAL IRRIGATING SOLUTION

(51) International classification	:H10D 1/47, H10D 1/62, H10D 1/68, H10K 101/50, H10D 64/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)DR. NEETU JAIN
6)NANCY GARG

(57) Abstract :
The invention discloses a novel herbal root canal irrigating solution comprising synergistic methanolic extracts of Acacia nilotica and Mimusops elengi. Conventional irrigants such as sodium hypochlorite are effective but suffer from cytotoxicity, unpleasant taste, and risk of tissue damage. The present formulation addresses these limitations by combining two plant extracts with complementary antimicrobial properties. Extracts are prepared by incubating powdered plant material in methanol, followed by filtration and drying. Minimum inhibitory concentration (MIC) studies confirm that the combination extract exhibits superior efficacy against Enterococcus faecalis and Streptococcus mutans, achieving inhibition at approximately 400 µg/mL compared to 600–1000 µg/mL for individual extracts. The solution is biocompatible, eco-friendly, and patient-acceptable, offering rapid microbial inhibition without cytotoxic effects. Pleasant taste and odor further enhance compliance. The invention thus provides a safe, effective, and sustainable herbal alternative to conventional irrigants, suitable for clinical application in root canal therapy.

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134327 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DYNAMIC DATA FUSION SYSTEM FOR AGRICULTURE USING IOT AND DEEP LEARNING

(51) International classification	:G06V 10/80, G01S 17/06, G01S 13/06, G01S 15/06, G06F 18/25
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)DR. VISHAL BHARTI

(57) Abstract :
The invention discloses a dynamic data fusion system for agriculture integrating IoT devices and deep learning models. Soil sensors, satellite imagery, and weather stations provide heterogeneous inputs synchronized through a novel time stamp mechanism that aggregates data every 15 minutes, eliminating inconsistencies. Edge computing modules filter anomalies and low-quality data, reducing bandwidth and energy consumption. Adaptive weighting prioritizes data streams based on environmental context, ensuring situation-specific predictions. Multimodal deep learning techniques fuse numerical, categorical, and visual data using CNNs, RNNs, and transformers, creating enriched datasets for accurate decision-making. Incremental learning enables continuous model updates without full retraining, while farmer feedback loops refine predictions in real time. The system delivers actionable recommendations for irrigation, fertilizer application, pest control, and yield prediction. Scalable and efficient, the invention provides a robust solution for precision agriculture, enhancing sustainability and productivity in resource-constrained environments.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134328 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEVELOPMENT OF DUAL IMMUNODIAGNOSTICS FOR RAPID DETECTION OF APPLE NECROTIC MOSAIC VIRUS IN PLANT SAMPLES

(51) International classification	:H01Q 5/392, H01Q 5/49
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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4)SUNNY DHIR

(57) Abstract :
The invention discloses a dual immunodiagnostic system for the rapid detection of apple necrotic mosaic virus (ApNMV) in plant samples. Recombinant coat protein of ApNMV was cloned, expressed, and purified to generate specific polyclonal antibodies. These antibodies were validated by indirect enzyme-linked immunosorbent assay (ELISA) for laboratory-based detection and conjugated to colloidal gold nanoparticles for lateral flow immunoassay (LFIA) strip assembly. The indirect ELISA provides reliable mass screening through antigen–antibody binding, producing measurable absorbance at 405 nm. The LFIA device enables field-level detection, with antibody-conjugated nanoparticles producing distinct test and control lines on nitrocellulose membranes within minutes. Optimization studies confirmed antibody concentrations of 10–12 µg/mL provided maximum nanoparticle stability, preventing salt-induced aggregation. Validation against RT-PCR demonstrated 100% sensitivity and specificity for LFIA, while ELISA exhibited 70% diagnostic sensitivity. The invention thus provides a cost-effective, portable, and user-friendly diagnostic solution for farmers, nurseries, and plant health agencies to manage ApNMV infections and reduce economic losses.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131983 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TUMOR MICROENVIRONMENT-ACTIVATED ANTIBODY–DRUG CONJUGATES EMPLOYING SELECTIVELY CLEAVABLE LINKERS FOR TARGETED CANCER THERAPY

(51) International classification	:A61P35/00, A61K31/00, A61K47/68, A61K47/65, A61K47/64, A61K39/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Preeti Garg
3)Dr. Gaurav Agarwal

(57) Abstract :
035] The present invention discloses tumor microenvironment-activated antibody–drug conjugates comprising an antibody or antigen-binding fragment, a cytotoxic or therapeutic payload, and a selectively cleavable linker that responds to tumor-specific biochemical or physicochemical cues such as enzymatic activity, acidic pH, redox potential, or hypoxia. The conjugates remain stable in systemic circulation and release the payload upon localization within tumor tissue, thereby enhancing therapeutic efficacy while minimizing systemic toxicity. The disclosed platform is versatile, allowing customization of antibodies, linkers, and payloads for a wide range of cancer types, and provides a robust strategy for targeted, controlled, and safe cancer therapy. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131984 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN MACHINE VISION AND CNN-INTEGRATED ROBOTIC SYSTEM FOR PRECISION AGROCHEMICAL SPRAYING AND DEEP CANOPY INSPECTION IN ORCHARD CROPS

(51) International classification	:A01M 7/00, B05B 13/04, G06N 3/04, G06N 3/08, B05B 12/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Prof. (Dr.) Poonam Panwar

(57) Abstract :
The invention provides an AI-driven, machine-vision-based robotic system designed for precise agrochemical spraying and deep canopy inspection in orchard environments. The system integrates high-resolution imaging, multi-sensor data acquisition, and Convolutional Neural Network (CNN) analysis to detect plant diseases, pests, and canopy health conditions in real time. A mobile platform with a 360-degree rotational housing, adaptive mechanical assemblies, and electronically controlled nozzles enables targeted, dosage-accurate spraying within dense foliage. A central mixing chamber formulates customised chemical solutions based on AI-derived recommendations, while ecological safety modules prevent drift and protect nests or sensitive zones. The system further incorporates root-level chemical delivery, selective cutting of infected plant parts, autonomous navigation, wireless data transmission, and an AI-learning engine for predictive treatment scheduling. The invention enhances plant health, reduces chemical wastage, and provides an advanced, environmentally responsible solution for automated orchard crop management. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131985 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IMMERSIVE VIRTUAL-REALITY SYSTEM FOR INTEGRATED SAFETY TRAINING AND PROCESS SIMULATION IN HOT METAL REFINING AND RECYCLING OPERATIONS

(51) International classification	:G09B 9/00, G09B 19/00, G06F 3/01, G09B 5/06, G09B 19/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Ms. Parul Gupta
3)Mr. Rohit
4)Mr. Mukul
5)Ms. Tamanna

(57) Abstract :
The present invention discloses an immersive Virtual Reality-based training system designed to replicate the complete workflow of hot metal refining operations in a safe, controlled, and highly interactive digital environment. The system comprises a VR headset, motion controllers, and a simulation engine that generates a three-dimensional refinery layout featuring scrap yards, weighing stations, melting furnaces, holding furnaces, ladle preheating areas, tapping zones, and transport pathways. Through physics-driven thermal modeling, the simulation reproduces heat gradients, molten-metal behavior, and furnace illumination patterns with realistic accuracy. Users perform refining tasks through gesture-based interaction while receiving real-time safety guidance via visual cues and audio alerts. The system further includes performance analytics to evaluate trainee proficiency and operational accuracy. By eliminating physical exposure to hazardous conditions, the invention significantly enhances industrial safety training, reduces operational risks, and provides a comprehensive platform for workforce skill development and metallurgical education. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131986 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOLAR-POWERED IOT-ENABLED TIRE PRESSURE MONITORING AND REMOTE WARNING SYSTEM

(51) International classification	:B60C 23/04, B60C 23/20, B60C 23/02, G01L 17/00, B60C 23/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A solar-powered IoT-enabled tire pressure monitoring and remote warning system is disclosed, comprising tire-mounted sensor modules with pressure and temperature sensors, a microcontroller unit, a wireless communication module, and an integrated solar power management unit. The system wirelessly transmits real-time tire data to an onboard receiver and a cloud-based IoT platform, enabling remote monitoring, predictive analytics, and GPS-based alerts. The invention provides continuous autonomous operation, timely notifications for underinflation, overinflation, punctures, and overheating, and predictive maintenance suggestions. The system is suitable for passenger vehicles, commercial fleets, electric vehicles, and two-wheelers, improving road safety, operational efficiency, and tire lifespan while reducing maintenance requirements. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131987 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FEEDBACK-CONTROLLED OSMOTIC PUMP TABLET WITH ADAPTIVE DRUG RELEASE APERTURE FOR PERSONALIZED DOSING

(51) International classification	:A61K9/00, A61M31/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Bharat Bhushan

(57) Abstract :
[036] An osmotic pump tablet with a feedback-controlled aperture for adaptive drug release is disclosed. The tablet comprises a drug core, an osmotic engine, a semi-permeable membrane, and at least one aperture whose effective opening is modulated by a responsive element in real time. A sensing component monitors physiological or environmental parameters such as pH, temperature, osmolarity, enzymatic activity, or local drug concentration, and triggers the modulation element to adjust the aperture size accordingly. This closed-loop feedback system enables dynamic, personalized dosing without external power sources or patient intervention, improving therapeutic efficacy, reducing adverse effects, and maintaining compatibility with conventional oral dosage manufacturing processes.
Accompanied Drawing [FIGS. 1-2]

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511131988 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTEGRATED REAL-TIME AIR QUALITY MONITORING, ANALYSIS, AND AUTOMATED ENVIRONMENTAL CONTROL SYSTEM FOR INDOOR AND URBAN APPLICATIONS

(51) International classification	:G01N 33/00, F24F 11/00, F24F 11/63, F24F 11/64, F24F 110/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
] The invention relates to an integrated real-time air quality monitoring and automated environmental control system designed to detect multiple pollutants including particulate matter, harmful gases, temperature, and humidity through a multi-sensor array. The system comprises a microcontroller-based processing unit that analyses sensor data, compares pollutant concentrations with predefined thresholds, and activates connected ventilation or purification devices through an actuator-based control mechanism when unsafe air quality is detected. A wireless communication module enables real-time transmission of environmental data, alerts, and system activity logs to cloud servers, dashboards, and mobile applications for remote monitoring and long-term analysis. The modular and scalable architecture supports deployment across residential, commercial, industrial, healthcare, and urban outdoor environments, enabling continuous environmental safety and enhancing responsiveness through automated corrective measures. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132040 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LEXILEARN: System and Method for AI Driven Gamified Correction of Dyslexia Specific Reading and Writing Errors

(51) International classification	:G09B 19/00, G09B 5/06, G09B 7/00, G06N 20/00, G09B 17/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Manvi Mishra
3)Dr. Shailesh Saxena
4)Dr. Prabhakar Gupta

(57) Abstract :
The present invention relates to an assistive learning system that integrates artificial intelligence with gamification to support individuals with dyslexia. Dyslexia-specific error patterns such as phonological substitutions, letter reversals, and sequential processing difficulties present challenges not addressed by conventional writing assistants. The disclosed system comprises a user interface for text input and literacy games, a processor executing machine learning algorithms trained to recognize dyslexia-related errors, a feedback module providing contextual corrective responses, and a gamification engine delivering points, badges, and rewards. A progress tracking module continuously updates user performance data, adjusts difficulty levels, and generates dashboards displaying achievements. The system operates in a secure, cloud-based environment enabling cross-device accessibility and real-time feedback. By combining adaptive AI correction with gamified engagement, the invention improves literacy confidence, accuracy, and long-term learning outcomes for dyslexic users.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132150 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AYURVEDIC HERBAL COMPOSITION FOR ENHANCING MEMORY AND NEURONAL FUNCTION AND METHOD OF PREPARATION

(51) International classification	:A61K 35/618, A61K 36/9066, A61K 31/12, A61P 25/28, A61K 33/26
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Shweta Sharma
4)Ravi Rawat

(57) Abstract :
An Ayurvedic polyherbal composition and method thereof is disclosed for supporting cognitive function, memory, and neuronal health. The composition includes extracts of Brahmi, Ashwagandha, Shankhpushpi, Gotu Kola, Turmeric containing curcumin, Guduchi, Mukta Pishti as a processed pearl-based mineral preparation, and a ghee-based lipid carrier acting as an anupana. The components are formulated into a homogeneous oral formulation and presented in a soft gelatin capsule. The composition reduces oxidative damage in neuronal cells through antioxidant activity, suppresses neuroinflammatory processes, supports neurogenesis and synaptic maintenance, and provides adaptogenic regulation of stress-related neuronal degeneration. The lipid carrier enhances absorption and facilitates transport of herbal constituents across the blood-brain barrier. The composition further demonstrates inhibition of acetylcholinesterase activity in vitro. The formulation is intended for supporting cognitive health in individuals experiencing neurological decline.

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(19) INDIA
(22) Date of filing of Application :26/12/2025

(21) Application No.202511132195 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD FOR PREPARING A CARBOHYDRATE-PROTEIN RECOVERY GEL AS A NUTRITIONAL SUPPLEMENT AND THE COMPOSITION THEREOF

(51) International classification	:A23J 1/14, A23J 3/14, A61K 36/185, A23L 1/305, A23L 29/269
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)VISHAL VERMA

(57) Abstract :
A method (100) for preparing a carbohydrate-protein recovery gel as a nutritional supplement and the composition (200) thereof is disclosed. The method (100) of preparation includes extracting protein isolates through milling, defatting, alkaline solubilization, ultrafiltration, and freeze-drying, followed by hydration, controlled heating, sequential addition of honey, xanthan gum, citric acid, and potassium sorbate, pH adjustment to approximately 4.2, homogenization, and cooling. The gel comprises plant-based protein isolates derived from seeds of species Cicer arietinum and species Cannabis sativa L., liquid honey as a carbohydrate source, xanthan gum, citric acid, potassium sorbate, water, and natural flavouring agents, maintaining a carbohydrate-to-protein ratio of 2:1.The formulation delivers a portable, plant-based recovery solution that enhances glycogen resynthesis, muscle repair, and microbial stability, offering a clean-label alternative to conventional recovery products for athletes. FIG. 1

No. of Pages : 27 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134055 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM FOR WRIST-PULSE DIAGNOSTICS

(51) International classification	:A61B5/00, A61B5/021, A61B5/024
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(72)**Name of Inventor :**
1)Sachin Kumar
2)Dr Karan Veer
3)Dr Sanjeev Kumar

(57) Abstract :
A system (100) for wrist-pulse diagnostics is disclosed. Further, system (100) comprises a frame (102) configured to accommodate a user's wrist. Further frame (102) comprises a first portion (102A) and a second portion (102B). Further the first portion (102A) comprises a plurality of primary structure (104) while the second portion (102B) comprises a plurality of secondary structure (108). Further, the primary structure (104) transmit force applied by user to three radial artery palpation points of wrist. Further a force sensing module (106) measures one or more primary parameters i.e. force on the wrist. Further a pulse sensing module (110) configured to acquire one or more secondary parameters from three radial artery palpation points of wrist. Further, at least one processor (112) processes the one or more primary and secondary parameters and transmits to an external computing device (118) for diagnostic interpretation. FIG. 1 and 2

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134095 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Pro-Relief Belt – A smart wearable therapeutic belt for menstrual, menopausal, muscular, and nerve pain relief

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Bhumika Saini
2)Parteek Santhosh Jain
3)Manpreet Kaur
4)Dr. Swati Saini

(57) Abstract :
The present invention relates to a smart wearable therapeutic belt to provide multi-modal pain relief and muscle relaxation through an integrated combination of vibration therapy, controlled heat application, and acupressure stimulation. The smart wearable belt comprises a compact lightweight, and ergonomically contoured structure suitable for prolonged wear across different body types. The belt is adjustable, rechargeable, and fashionable so that users can use it as a casual or inner belt anywhere and anytime. With mobile connectivity, ergonomic design, and sustainable materials, the Pro-Relief Belt is a contemporary, portable, and accessible wellness solution for comprehensive pain relief.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/01/2026
(21) Application No.202611000022 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CROSS-CONJUGATED TRIETHYNYLETHYLENE COMPOUNDS AND A METHOD FOR THE PREPARATION THEREOF''

(51) International classification	:C07C2/04, C07C2/08, C07C2/24, C07C2/38, B01J23/44, B01J23/72
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Manpreet Singh
2)Abhishek Saini

(57) Abstract :
The present invention relates to cross-conjugated triethynylethylene compounds (100) and to a method (200) for the preparation thereof. The invention provides triethynylethylene compounds (100) comprising an ethylenic core substituted with three alkynyl groups, wherein at least two alkynyl groups are bonded to the same ethylenic carbon atom. The method (200) comprises reacting a gem-dihalo alkenyl precursor with one or more terminal alkynes in the presence of a transition-metal catalyst system and a base, thereby effecting multiple alkynyl substitutions on the ethylenic core. The method (200) operates under mild conditions, exhibits good chemoselectivity, and is suitable for scalable synthesis. The compounds (100) obtained are useful as versatile molecular scaffolds and intermediates for further chemical transformations, including late-stage functionalization and annulation reactions, and for the construction of π-conjugated and polycyclic aromatic frameworks. FIG. 1

No. of Pages : 46 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/01/2026

(21) Application No.202611000057 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EchoVision Belt – A Wearable Ultrasonic-Based 360° Obstacle Detection and Voice-Alert Assistive Device

(51) International classification	:G01S 15/931, A61H 3/06, G01S 15/08, G01C 21/20, G01S 15/86
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A wearable assistive navigation system is disclosed for visually impaired users. The system comprises an adjustable belt having multiple ultrasonic distance sensors positioned to detect obstacles in front, rear, left, and right directions, a microcontroller configured to compute obstacle distance and direction, and a wireless module to transmit encoded obstacle data to a smartphone application. The mobile application interprets the received data and generates direction-specific, distance-specific spoken alerts using text-to-speech. The system provides real-time 360° obstacle awareness in indoor and outdoor environments using low-cost, compact hardware.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025
(21) Application No.202511133726 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED CUSTOM GARMENT FABRICATION AND STITCHING SYSTEM

(51) International classification	:A41D 1/00, H04L 41/5067, A41F 17/00, A41F 19/00, H04L 41/507
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Neetu Mahendru

(57) Abstract :
An automated custom garment fabrication and stitching system, comprising a base platform 101 is configured to rest on a surface and includes a rotatable circular plate 102 adapted to support a user standing for measurement, an AI-enabled camera 105 captures precise body measurements, a holographic projection unit 106 displays a 3D virtual model reflecting the user's dimensions and selected fabric attributes, a fabric dispensing and positioning arrangement 110 delivers and aligns cloth on a cutting table 109, a cutting arrangement 111 cut and shape fabric according to user specifications, a sewing unit 114 on the gantry comprises a needle 114a and shuttle hook 114b for sewing, a thread-feeding module 115 includes thread reels 115a in a chamber 115b, a motorized hinge joint 115c, and an extendable bar 115d with a suction unit 115e, and a QR code generation module enables payment.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133730 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SAFETY STAIR RAILING SYSTEM

(51) International classification	:E01B 5/02, B61B 13/12, F21W 111/027, E01B 5/04, A47H 1/144
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Sneh Lata
8)Jamana Banger

(57) Abstract :
A safety stair railing system, comprises of a railing structure 101 configured to be mounted alongside a stairway or elevated platform, a plurality of overlapping plates 105 with a set of motorized sliders 106 arranged between the overlapping plates 105 for adjusting stair height in response to detected user characteristics, an AI-based camera 102 mounted on the railing structure 101 for capturing facial features of a user approaching the railing, a microcontroller configured to process the facial data to estimate user age and actuate the motorized sliders 106 accordingly, a plurality of sensing modules integrated with the railing structure 101 for detecting hand presence, grip consistency, and movement patterns of the user, a wearable band 107 communicatively linked to the microcontroller and comprising an accelerometer and gyroscope for detecting user movement, balance, and gait, and a foldable seating platform 108 mounted on a slider 109 for vertical movement and support.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/12/2025

(21) Application No.202511133731 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI-LAYERED KNEE ORTHOTIC

(51) International classification	:B62J 25/02, H03C 1/58, B32B 15/085, B32B 15/088, B32B 15/09
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Arpit Kulshreshtha

(57) Abstract :
A multi-layered knee orthotic, comprising a multi-layered shield structure 101 designed to conform naturally to a human knee, a plurality of articulated segments 105 integrated with flexible joints 106 attached with the shield structure 101 to minimize restriction and enable full freedom of movement while maintaining protective integrity over knee joint, a set of straps 107 configured with memory-fit fabric provided with shield structure 101 to wrap around calf and thigh regions of knee, Velcro fastening means 110 are configured with the straps 107 to allow secure and customizable fitting around user's knee, a thermos-regulation module provided with shield structure 101 includes a detachable thermal gel insert 108 arranged to facilitate in inflammation control and pain management, and a biomimetic C-shaped footplate 109 is configured with the shield structure 101 for natural rollover while walking.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/01/2026
(21) Application No.202617005320 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DETACHABLE AUTOMATIC TIGHTENING SHOE TIGHTNER

(51) International classification :A43C 11/16
(31) Priority Document No :63/584704
(32) Priority Date :22/09/2023
(33) Name of priority country :U.S.A.
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(72)**Name of Inventor :**
1)JOHNSON, Gregory Glenn

(57) Abstract :
Apparatus and associated methods relate to a hands-free rotational shoestring tightening device (RSTD) configured to adjust a tension of a shoestring by rotating a wheel against the ground. In an illustrative example, the RSTD may include a base module permanently attached at a heel at a proximal end along a longitudinal axis of a shoe. The base module, for example, may include an opening at the proximal end of the shoe. The RSTD may include, for example, a roto component configured to releasably couple into the opening of the base module. The roto component may include a wheel. The roto component may include an axle shaft coupled through a hub of the wheel. In an assembled state, for example, the roto component is releasably locked within a cavity defined by the base module and the lock module. Various embodiments may advantageously provide replaceable parts of the roto component.

No. of Pages : 21 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202512131786 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-ASSISTED METHOD AND SYSTEM FOR MANAGING DATA BACKUP FOR DATACENTER

(51) International classification	:G06F 11/14, G06N 20/00, G06N 5/04, H04L 12/24, G06N 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filed on	:202511123479 :08/12/2025

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2)Mahipat Rao Kulkarni

(57) Abstract :
An artificial intelligence (AI) assisted method (300) and a system (100) for managing data backup of a datacenter is provided herein. A processor (104) periodically receives operational information and user activity information from one or more systems of the datacenter and backup infrastructure specification. The operational information and the user activity information may be analysed by using one or more AL models to determine a set of key features corresponding to data access patterns and system performance metrics. Further, the processor (104) by using the one or more AI models monitors the operational information and the user activity information to determine anomaly information. A backup plan is determined based on the set of key features and the anomaly information and in compliance with backup infrastructure specification. (To be published with Figure 1)

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132203 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD FOR PRODUCING PAPER PULP FROM AN AGRICULTURAL-WASTE RESIDUE

(51) International classification	:D21C 3/00, D21C 3/02, D21C5/00, D21H 11/00, D21C 1/00, D21C 1/02, D21B 1/00, D21B 1/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A method for producing paper pulp from an agricultural-waste residue is disclosed. The method includes collecting a fibrous residue from a plurality of compressed biogas production plants. The method includes washing the fibrous residue to remove a residual methane gas and traces of a plurality of impurities and digesting the fibrous residue at least 165 degrees centigrade temperature and at least 7 kilogram per square centimetre pressure in presence of at least 6.5 percentage of caustic soda to produce the pulp. The method includes bleaching the pulp with at least 4 kilograms per ton of chlorine dioxide, at least 25 kilograms per ton of caustic soda, at least 4 kilograms per ton of oxygen, at least 9 kilograms per ton of hydrogen peroxide and subsequently washing the pulp at each bleaching step, thereby producing a bleached pulp suitable for paper manufacturing. FIG. 1

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202511132209 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PROCESS FOR RECOVERING INDIUM TIN OXIDE

(51) International classification	:C01G 19/00, C01G 19/02, C01G 15/00, C01G 1/00, H01B 13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)GAHLOT, Rohit

(57) Abstract :
The present disclosure relates to a reagent-free, energy-efficient process for recovering ITO from ITO-containing materials. The process comprises obtaining an enriched ITO black mass from an ITO-coated glass substrate, subjecting the enriched ITO black mass to a first-stage pyrolysis under an inert gas atmosphere at 350–400°C to remove organic and halogen-containing impurities, followed by a second-stage pyrolysis under an inert gas atmosphere at 500–800°C to stabilize oxide phases. The inert gas atmosphere is subsequently replaced with an oxygen atmosphere at 500–800°C to oxidatively remove residual carbon and regenerate crystalline ITO.

No. of Pages : 23 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/12/2025

(21) Application No.202514125268 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Baggage Aerobridge

(51) International classification	:B64F1/305, B64F1/32, E01D15/10, E01D18/00
(31) Priority Document No	:India
(32) Priority Date	:11/12/2025
(33) Name of priority country	:India
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)FLYENGINE

(57) Abstract :
Aerobridges (or PBB – Passenger Boarding Bridges) have reduced movement of people, passenger buses in the aircraft manoeuvring areas. However, the passenger luggage and catering trucks move in the aircraft manoeuvring areas. A suitable Aerobridge can be designed which can transfer luggage, food and catering items. Certain modifications in the cargo doors may be required on the aircraft which the aircraft designers and aerobridge designers can work in collaboration. Further, the luggage boxes can be standardised for easy belting, loading and packing with aviation standard restrain system.

No. of Pages : 3 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202511134603 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE EMERGENCY MOBILITY MANAGEMENT SYSTEM WITH TRAFFIC–HOSPITAL COORDINATION

(51) International classification	:H04W 12/37, H04W 64/00, H04W 84/08, H04L 41/046, H02S 10/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Kusum Kanwar

(57) Abstract :
The present invention relates to an adaptive emergency mobility management system (100) for enabling coordinated emergency vehicle movement and hospital preparedness in urban traffic environments. The system comprises an emergency vehicle (110) equipped with an emergency vehicle module (111), a central control unit (120), smart signal controllers (130) operatively connected to traffic signal assemblies (131) across a traffic network (140), a hospital communication interface (150) linked to a hospital information system (151), a data communication network (160), and a post-clearance traffic recovery module (170). Upon activation, the emergency vehicle module (111) transmits real-time vehicle data to the central control unit (120), which performs predictive route analysis and synchronizes traffic signals via the smart signal controllers (130). Simultaneously, arrival information is communicated to the hospital information system (151), and normal traffic flow is gradually restored after emergency vehicle passage. Reference Fig 1
No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202514132147 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR AMMONIA SYNTHESIS COUPLED WITH HYDROGEN PRODUCTION

(51) International classification	:C01C1/02, C01C1/04, B01D53/047, C01B3/025
(31) Priority Document No	:202510294319.8
(32) Priority Date	:12/03/2025
(33) Name of priority country	:China
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)ZHANG, Jian

(57) Abstract :
Provided are a system and method for ammonia synthesis coupled with hydrogen production. The system includes: a hydrogen production module, a hydrogen deoxygenation module, an adsorption module, and an ammonia synthesis module connected in sequence; and a nitrogen supply module, a regeneration module, and the adsorption module connected in sequence. When one of the regeneration module and the adsorption module includes a first adsorption tower, the other includes a second adsorption tower. A hydrogen purification module, the nitrogen supply module, and the ammonia synthesis module are all connectable and disconnectable to the first adsorption tower and the second adsorption tower. The nitrogen supply module supplies nitrogen, the regeneration module uses nitrogen to perform desorption regeneration in the first adsorption tower or the second adsorption tower and supplies nitrogen to the adsorption module. Figure 2 is the representative figure.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/01/2026
(21) Application No.202611000081 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEVELOPMENT AND EVALUATION OF INTRANASAL MUCOADHESIVE GEL CONTAINING DRUG AND POLYMER

(51) International classification	:A61K9/06, A61K47/36, A61K31/722, A61K47/12, A61K47/10, A61P31/04, A61K47/18, A61K31/045
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Pooja Narang
4)Mrs. Shivangi
5)Dr. Prashant Upadhyay
6)Dr. Sukirti Upadhyay
7)Mr. Himank Varshney

(57) Abstract :
The present invention relates to an intranasal mucoadhesive gel formulation comprising tramadol hydrochloride and chitosan as natural bioadhesive polymer designed for controlled and sustained drug release through nasal mucosa. Five formulations containing varying concentrations of chitosan ranging from 0.1 to 0.5 percent weight by volume were prepared and systematically evaluated for physicochemical properties including pH, viscosity, spreadability, drug content, and in-vitro diffusion characteristics. Fourier transform infrared spectroscopy analysis confirmed complete compatibility between tramadol and chitosan with absence of chemical interactions ensuring formulation stability. The optimized formulation containing 0.3 percent weight by volume chitosan demonstrated superior balance of mucoadhesive strength, appropriate viscosity, and sustained release profile releasing 50 percent drug within 2 to 4 hours with cumulative release of 94.37 percent over 5 hours. Drug content across formulations ranged from 90.62 to 96.37 percent. Kinetic modeling revealed drug release following Hixson-Crowell model indicating dissolution-controlled mechanism.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/01/2026
(21) Application No.202611000607 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN IOT-BASED AUTOMATED WATER PURIFICATION SYSTEM INTEGRATING MORINGA OLEIFERA AND METHOD THEREOF

(51) International classification	:C02F 1/44, C02F 9/02, C02F 1/28, C02F 9/00, C02F 9/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)ANURAG MALIK
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4)B.R. KAMBOJ
5)PRADEEPTO PAL
6)HIMANI PUNIA
7)RAJBIR GARG

(57) Abstract :
The present invention relates to an IoT-based automated water purification system integrating Moringa oleifera for sustainable and efficient treatment of contaminated water. The system comprises a two-stage natural filtration unit including a pre-sedimentation filter containing coarse Moringa oleifera seed and root powder combined with sand particles, and a post-sedimentation filter containing fine Moringa oleifera seed and root powder combined with sand particles for sequential removal of suspended impurities and microbial contaminants. The system further includes conventional carbon filters and a reverse osmosis membrane positioned downstream to enhance purification efficiency and reduce membrane fouling. A sensor node comprising pH, turbidity, total dissolved solids, water level, and water pressure sensors enables real-time monitoring of water quality and system health, including blockage detection. The system is powered by a solar energy unit and incorporates Bluetooth-based communication with a mobile application for remote monitoring and control. The invention provides a cost-effective, energy-independent, and sustainable solution suitable for domestic, rural, and community-level water purification applications.

No. of Pages : 28 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/01/2025
(21) Application No.202521001284 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BELLY PAN MOUNTING ARRANGEMENT FOR SADDLE TYPE VEHICLE

(51) International classification	:B62K19/48, B62J17/00, B62J23/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)MUKESH SINGH
3)KARAN PRATAP SINGH
4)HEJAZ AHMED

(57) Abstract :
ABSTRACT BELLY PAN MOUNTING ARRANGEMENT FOR SADDLE TYPE VEHICLE The present disclosure describes a belly pan mounting arrangement (100) for a saddle type vehicle. The arrangement (100) comprises a vehicle frame (102) comprising a pair of front tubes (104) and a pair of bottom tubes (106). Further, the arrangement (100) comprises a belly pan assembly (108) comprising a front cover (110), a right cover (112) and a left cover (114). Furthermore, the belly pan assembly (108) is mounted on the vehicle frame (102) at the pair of front tubes (104) and the pair of bottom tubes (106). FIG. 1

No. of Pages : 54 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/01/2025

(21) Application No.202521001285 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD AND SYSTEM FOR DETERMINING BATTERY PARAMETERS

(51) International classification	:H01M10/42, H01M10/48, B60L58/10, G01R31/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)KUMAR PRASAD TELIKEPALLI
2)ANSHUL TYAGI
3)HARDIK MAHENDRAKUMAR MEHTA

(57) Abstract :
ABSTRACT METHOD AND SYSTEM FOR DETERMINING BATTERY PARAMETERS The present disclosure describes a self-diagnostic Battery Management System (BMS) (100) of a powerpack (102). The BMS (100) comprises at least one voltage sensing module (104), at least one current sensing module (106), at least one temperature sensing module (108), a processing module (110) and a memory unit (112). Further, the processing module (110) is configured to compare the open-circuit voltage value, the full charge capacity value, and the at least one temperature value with the stored baseline operational parameters data and calibrate battery management parameters based on the comparison. FIG. 1

No. of Pages : 32 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/01/2025
(21) Application No.202521001286 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PKE MOUNTING UNIT STRUCTURE

(51) International classification	:B62K19/30, B60R25/24, B62K19/34, B60R11/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)RAMACHANDRAN R
2)NISHANT KUMAR
3)DHEERENDRA KUMAR SINGH

(57) Abstract :
ABSTRACT PKE MOUNTING UNIT STRUCTURE The present disclosure describes a Passive Keyless Entry (PKE) unit mounting arrangement (100) for saddle type vehicle. The mounting arrangement (100) comprises an upper frame tube (102) of a vehicle, a mounting bracket (104) and a PKE unit (106). The PKE unit (106) is mounted on the upper frame tube (102) via the mounting bracket (104). FIG. 1

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202521001287 A
(19) INDIA
(22) Date of filing of Application :06/01/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : CRASH GUARD MOUNTING ARRANGEMENT FOR SADDLE TYPE VEHICLE

(51) International classification	:B62J27/30, B62K11/02, B62D21/15
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT CRASH GUARD MOUNTING ARRANGEMENT FOR SADDLE TYPE VEHICLE The present disclosure describes a crash guard mounting assembly (100) for a saddle type vehicle. The crash guard mounting assembly (100) comprising a vehicle frame (102) comprising a middle frame tube (104) and a lower frame tube (106), a crash guard assembly (108) comprises a top end (108a) and a bottom end (108b) and a pair of mounting support (110a, 110b) positioned at the top end (108a) and the bottom end (108b) of the crash guard assembly (108). The top end (108a) of the crash guard assembly (108) is rigidly connected to the middle frame tube (104) via the pair of mounting support (110a, 110b), and the bottom end (108b) of the crash guard assembly (100) is rigidly connected to the lower frame tube (106), via at least one fastener (112). FIG. 1

No. of Pages : 23 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/01/2025
(21) Application No.202521001288 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REAR STYLING ASSEMBLY FOR TWO-WHEEL VEHICLES

(51) International classification	:B62K19/48, B62K19/30, B62J17/00, B62J23/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT REAR STYLING ASSEMBLY FOR TWO-WHEEL VEHICLES The present disclosure describes a rear styling assembly (100) for a saddle type vehicle, the assembly (100). The assembly (100) comprises a rear cowl assembly (102) comprising a right rear cowl panel (104), a left rear cowl panel (106), and a center rear cowl panel (108). Further, assembly (100) comprises a taillight (110). Furthermore, assembly (100) comprises an inner fender assembly (112). Moreover, the rear cowl assembly (102) and the inner fender assembly (112) are mounted on a tail end (114) of a vehicle frame (116). FIG. 1

No. of Pages : 38 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2024
(21) Application No.202421103832 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD AND SYSTEM FOR AUTOMATED DETECTION AND EVIDENCE-BASED REPORTING OF ENVIRONMENTAL OR REGULATORY DEVIATIONS USING DISTRIBUTED VIDEO SOURCES

(51) International classification	:G06V20/50, G06V20/52, G06V10/82, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Naman Paithankar
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(57) Abstract :
The present disclosure relates to a method and system (106) for automated detection and evidence-based reporting of environmental or regulatory deviations using video data acquired from the plurality vehicles (102a…102d). The system (106) receives video streams containing timestamp and geolocation metadata and anonymizes the streams by obfuscating personal identifiable information. Overlapping video portions from different vehicles are identified and correlated, and the correlated portions are processed using machine-learning models to detect objects or events and classify them into predefined incident categories. Redundant detections are removed through cross-vehicle clustering, and each validated incident is mapped to a geographic segment where a severity score is computed. Detected incidents are cross-verified against external authoritative data sources prior to generating a digital ticket containing evidence and classification details. Each ticket is routed to designated enforcement or regulatory platforms, and follow-up video data is analyzed to verify remediation over time.

No. of Pages : 55 No. of Claims : 25

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2025
(21) Application No.202521005691 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD AND SYSTEM FOR PROVIDING VEHICLE ACCESS

(51) International classification	:H04L0009400000, B60K0035600000, H04L0009320000, H04L0009080000, H04W0012040000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)PANKAJ KUMAR BHARTI
4)MAYUR YADAV
5)MAYUR PARMAR

(57) Abstract :
ABSTRACT METHOD AND SYSTEM FOR PROVIDING VEHICLE ACCESS The present disclosure describes a system (100) for providing access to a vehicle. The system (100) comprises at least one Electronic Unit (EU) (102) operatively coupled to at least one vehicle subsystem (104). Further, the system (100) comprises at least one in-network device (106) communicably coupled to the at least one electronic unit (102) and configured to request access to the at least one electronic unit (102). Furthermore, the system (100) comprises a processing unit (108) operatively coupled to the at least one electronic unit (102). Moreover, the system (100) comprises a memory unit (110) communicably coupled to the processing unit (108) and configured to store a plurality of security groups. Additionally, the processing unit (108) is configured to provide the access to the at least one in-network device (106) based on a validation of the at least one in-network device (106) with the plurality of security groups. FIG. 1

No. of Pages : 38 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2025
(21) Application No.202521005692 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD AND SYSTEM FOR MANAGING VIDEO CALLS IN VEHICLE(S)

(51) International classification	:H04N0007140000, G02B0027010000, H04N0007150000, B60K0035000000, H04M0001663000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT METHOD AND SYSTEM FOR MANAGING VIDEO CALLS IN VEHICLE(S) The present disclosure describes a system (100) for managing calls in a vehicle (102). The system (100) comprises a display unit (104) electrically connected to the vehicle (102), a communication module (106) communicably coupled to the display unit (104), a plurality of sensors (108) operatively coupled to at least one vehicle subsystem (110) and configured to sense at least one operational parameter of the vehicle (102), a conditioning module (112) operatively coupled to the plurality of sensors (108) and configured to determine driving conditions of the vehicle (102), and a processing unit (114) operatively coupled to the plurality of sensors (108). Furthermore, the display unit (104) and the conditioning module (112), the processing unit (114) is configured to control the calling functions on the display unit (104) based on the operational parameters and the driving conditions of the vehicle (102). FIG. 1

No. of Pages : 43 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/10/2024
(21) Application No.202421078827 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : THREE-DIMENSIONAL PRINTED CONSTRUCTION BLOCKS COMPOSITION AND METHOD OF PREPARATION THEREOF

(51) International classification	:B09B3/20, B09B3/30, B09B3/70, B09B3/00, C04B18/00, B33Y70/10, B33Y99/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract THREE-DIMENSIONAL PRINTED CONSTRUCTION BLOCKS COMPOSITION AND METHOD OF PREPARATION THEREOF The present invention relates to a three-dimensional (3D) printable construction block composition and a method for its preparation. The composition utilizes textile waste in combination with soil and other natural components to produce sustainable, low-cost, and eco-friendly construction materials suitable for 3D printing applications. The composition comprises textile waste, soil component, and sand component, mixed to form a dry mix and subsequently combined with water to form a printable wet mix. The composition may optionally include natural waste, binder, or adhesive component. The prepared wet mixture is suitable for extrusion through a 3D printing robotic arm to fabricate construction blocks. The invention provides an effective method of reusing textile waste while reducing the environmental impact of conventional building materials. Ref Figure. 2d

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2025
(21) Application No.202521030041 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NETWORK COMMUNICATION FOR CONNECTED VEHICLES

(51) International classification	:H04W 4/40, H04L 9/32, H04W 12/06, H04W 12/72
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)DR. YAGNANARAYANAN KALYANARAMAN

(57) Abstract :
ABSTRACT NETWORK COMMUNICATION FOR CONNECTED VEHICLES The present disclosure describes a communication system (100) for a connected vehicle. The communication system (100) comprises a vehicle unit (102) comprising a Subscriber Identification Module (SIM) (104), and a vehicle data processing module (106) and an external unit (108) comprising an external data processing module (110) and communicably coupled with the vehicle unit (102), via a communication network. The vehicle data processing module (106) is configured to generate an instant authentication key for the vehicle unit (102) and share the generated instant authentication key to the external unit (108). FIG. 1

No. of Pages : 40 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2025
(21) Application No.202521030047 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VEHICLE THEFT PREVENTION

(51) International classification	:H04L67/00, H04W12/06, G06F21/44, B60R25/24, H04L9/32, H04L9/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT VEHICLE THEFT PREVENTION The present disclosure describes a vehicle control module (100) for controlling at least one control element mounted on a vehicle. The vehicle control device (100) comprising a first control unit (102) configured to authenticate an operation request information for at least one controllable object (104), received from a transmission source and a second control unit (106) configured to control the at least one controllable object (104) based on the authenticated operation request information acquired from the first control unit (102). The first control unit (102) and the second control unit (106) hold a common encryption key, and the common encryption key comprises the authenticated operation request information. FIG. 1

No. of Pages : 46 No. of Claims : 21

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/08/2025

(21) Application No.202521081263 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "METHOD AND DESIGN OF LOW-COST EQUIPMENT FOR CONDUCTING SHEAR TESTS ON SOFT AND HARD MATERIAL INTERFACES"

(51) International classification	:G06F0011360000, H01L0027020000, G06F0030200000, G06F0119140000, G01N0019020000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Dr. Kishor B. Waghulde

(57) Abstract :
The present invention relates to the field of tribology and mechanical interface testing. More particularly, it pertains to a low-cost method and apparatus for conducting shear friction tests at interfaces between soft materials and hard materials. The invention is designed to perform slide-hold-slide type friction experiments and similar shear tests in order to study frictional properties – including static friction, dynamic friction, and stress relaxation – as well as interfacial fracture phenomena (such as crack propagation) at material interfaces.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202421077992 A
(19) INDIA
(22) Date of filing of Application :15/10/2024
(43) Publication Date : 06/02/2026

(54) Title of the invention : GRAVITY DIE-CASTING MACHINE AND A SYSTEM ASSOCIATED THEREWITH

(51) International classification	:B22D 18/04, B22D23/00, B22D 17/00, B22D35/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Uttam Singh Ahedi

(57) Abstract :
GRAVITY DIE-CASTING MACHINE AND A SYSTEM ASSOCIATED THEREWITH ABSTRACT Disclosed are a gravity die-casting machine (100) and a system (400) associated therewith. The machine (100) includes a main body which has all the moving parts of the die-casting machine (100) excluding the main body support number (24) and the tilt cylinder (22). The machine (100) includes the dies (14, 19) that are split such that two four-cavity dies are placed right next to each other so that the dies act as one eight-cavity die. The system (400) comprises the machine (100), robots (150), the furnace (200), and a quenching tank (300). The furnace (200) is configured such that some of the molten metal is recirculated from the tapping chamber (203) to the holding chamber (201). The machine (100) and the system (400) provide a fourfold increase in production compared to old machines/methods. The recirculation ensures that the temperature and purity of molten metal are maintained inside the furnace. [To be published with Figure 3]

No. of Pages : 24 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/05/2025
(21) Application No.202521047630 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Method and System for Generating Public and Private Keys Using Semigroups.

(51) International classification	:H04L0009300000, H04L0009080000, H04L0009000000, H04L0009320000, H04L0009060000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Mr. Yogesh Nabaji Shinde

(57) Abstract :
This invention presents a novel cryptographic method for generating public key 3 and private key 4 using semigroups 1, specifically ternary and partially ordered ternary semigroups. Traditional cryptographic systems rely on number theory, which is vulnerable to quantum attacks. This system leverages the algebraic properties of semigroups 1 such as non-commutativity, non-invertibility, and associativity to ensure strong security and computational irreversibility. The private key 4 is selected from a complex semigroup 1 structure, while the public key 3 is generated using semigroup 1 operations with public elements. The resulting public key 3 is safe to distribute and cannot be reverse-engineered to reveal the private key 4. This method supports ternary operations, pseudo-symmetric ideals, and bi-ideals for enhanced cryptographic strength. It is suitable for a range of applications, including secure communications, digital signatures, and post-quantum cryptographic systems.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/10/2025
(21) Application No.202521095950 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NON-TOXIC CRAYONS COMPRISING ORGANIC PLANT-BASED WAXES AND BUTTERS AND METHOD FOR THEIR MANUFACTURE

(51) International classification	:H10K0071000000, C09D0013000000, A61K0008060000, A61K0008920000, A61K0008360000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Aditi J Vyas

(57) Abstract :
"NON-TOXIC CRAYONS COMPRISING ORGANIC PLANT-BASED WAXES AND BUTTERS AND METHOD FOR THEIR MANUFACTURE" The present invention relates to a formulation and manufacturing method for producing non-toxic, edible-grade, and safe organic crayons. The formulation comprises an oil phase of 0.5 – 50% organic palm wax, 0.5 – 50% organic soya wax, 0.5 – 50% organic soya butter, 0.5 – 50% organic coconut butter, and 0.5 – 60% stearic acid; and a color phase of 0.5 – 10% food-grade pigments, and 0.5 – 20% mild surfactant. In addition, the crayon is characterized by an ergonomic shape, such as square, rectangular, pencil-like, or oval, to enhance usability and safety for children. The manufacturing method ensures enhanced thermal stability and uniform pigment dispersion by utilizing a high-speed stirrer set at 2000 RPM and a controlled cooling and casting stage at 52 °C to 55 °C, thereby providing a product with consistent texture, hardness, and vibrant coloration.

No. of Pages : 32 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/05/2025
(21) Application No.202521052066 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR OPTIMIZING AND SIMULATING THERMOCHEMICAL REACTOR CONDITIONS TO DETERMINE CORROSION OF MATERIALS IN MOLTEN SALT MEDIA

(51) International classification	:G01N0017000000, H02J0003000000, G16H0010400000, G01N0035100000, C03C0021000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)SWANAND RAGHUNATH PATANGE
4)ASHWINI BHAGAVAN NIRUKHE
5)DAMARAJU PARVATALU
6)UTHANDI KAMACHI MUDALI
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8)JITENDRA SINGH RATHORE
9)RAJESH KUMAR

(57) Abstract :
SYSTEM AND METHOD FOR OPTIMIZING AND SIMULATING THERMOCHEMICAL REACTOR CONDITIONS TO DETERMINE CORROSION OF MATERIALS IN MOLTEN SALT MEDIA The present invention provides a novel laboratory system and a method for optimizing and simulating thermochemical reactor operating parameters to determine corrosion of material used in construction of said plant in presence of molten salt media. The optimizing and simulating the actual parameters of the thermochemical reactor in the laboratory instrument/system can significantly play an important role in determination of actual corrosion of material used in the construction of the reactor. These crucial parameters are composition of molten salt, high temperature heating and cooling cycle, moisture content, inert atmosphere and reactive gases etc. Hence, the present invention provides a comprehensive and versatile testing laboratory system (300) for optimizing and simulating thermochemical reactor operating parameters to determine corrosion of materials in molten salt media, the system (300) comprising test assembly (400), transfer assembly (500), a transfer line (600) connecting test assembly (400) and transfer assembly (500);Characterized in that the molten salt media transfer from test assembly to transfer assembly via transfer line and vice-versa in time interval with the help of vacuum and pressure. The results obtained from present invention system enables accurate comparisons and informed decision-making in material selection for building reactors to ensure its long-lasting working life in the field of sustainable and economic renewable energy generation.

No. of Pages : 32 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/10/2025
(21) Application No.202521100061 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN IoT-ENABLED MODULAR HYBRID ENERGY GENERATION AND MANAGEMENT SYSTEM

(51) International classification	:H02J0003380000, H02J0003320000, H02J0013000000, H02J0007350000, H02J0007340000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)PRAJAPATI LOKESHKUMAR HARESHKUMAR

(57) Abstract :
"AN IoT-ENABLED MODULAR HYBRID ENERGY GENERATION AND MANAGEMENT SYSTEM" The present invention relates to an IoT-enabled modular hybrid energy generation and management system (100), comprises a power conversion module (130) configured to autonomously generate a substantial majority of the power required by the connected load, specifically 85-95%, achieving 92-95% efficiency by utilizing SiC MOSFETs in a DC-DC soft switching stage; an energy controller (120) based on a two-tier control architecture: an adaptive ML-based optimization module (122) which maintains external grid draw at a minimum 5-10% threshold, and a multi-source switching logic (123) that executes power transfer with an ultra-low latency of less than 100 ms; an energy storage management unit (140) includes a multi-chemistry battery management system (141) implementing a proprietary charging schedule to extend the recharge cycle to 10-15 days; and an IoT-based monitoring & control unit (150) transmits real-time data via CAN/RS-485 and summarized telemetry via the MQTT protocol to enable predictive analytics and remote management. The system supports bi-directional power flow via a grid synchronization interface (170). Figure. 1

No. of Pages : 40 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/11/2025

(21) Application No.202521107437 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART SALINE ALARM SYSTEM

(51) International classification	:G08B 29/02, G08B 29/12, G08B 29/16, G08B 25/00, H04M 11/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a Smart Saline Alarm System for continuously monitoring the fluid level (412) in intravenous saline bottles (410) in hospital and healthcare settings. The system implements a taidacent non-contact liquid level sensor (414) externally attached to the saline bottle (410), which detects when the fluid reaches a critically low level without directly contacting the fluid, preventing contamination. Upon detection of low saline, the sensor triggers both buzzer (418) and alert board (416), illuminating the specific patient's room or bed number for immediate identification of medical staff. An independent battery (502) backup ensures continuous operation even during power failures. The invention further provides reliable, real-time alerts to prevent blood backflow and associated complications, ensuring timely intervention, improving patient safety and reducing staff workload through an efficient plug-and-play monitoring solution.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/01/2025

(21) Application No.202521000063 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “ADJUSTABLE SPATULA FOR PRECISE DISPENSING AND MIXING OF DENTAL MATERIALS”

(51) International classification	:A61C5/60, A61C5/68, A61C3/00, A61C19/04, A61C19/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)MRUNMAYI PAWAR

(57) Abstract :
ABSTRACT “ADJUSTABLE SPATULA FOR PRECISE DISPENSING AND MIXING OF DENTAL MATERIALS” An adjustable spatula for dispensing and mixing dental materials, comprising: a spatula body having a mixing blade at a first end and an integrated scoop at a second end, the scoop configured to hold a variable quantity of powder; a sliding track disposed on a surface of the spatula body adjacent to the scoop; a plurality of frictional lock lines positioned on an opposing surface of the spatula body, spaced at predetermined intervals to calibrate powder volume; and a slider assembly slidably engaged with the sliding track, the slider assembly including a vertical plate extending into the scoop to adjust its effective volume and interlocking grooves configured to mate with the frictional lock lines for secure positioning.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/09/2025
(21) Application No.202521085618 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DIGITAL CLAY CLADDING

(51) International classification	:G09F0009330000, E04F0013080000, F21Y0115100000, H05K0001030000, G09F0009300000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Smita Tiwari

(57) Abstract :
The present invention relates to a flexible digital clay cladding system (105) incorporating an embedded flexible light-emitting diode (LED) screen (102) for concealed digital display applications. The panel comprises a three-layer composite structure, including a translucent top layer (101) composed of a glass bead and kaolin mixture configured to visually mimic materials such as travertine, marble, or leather while allowing controlled light diffusion. The middle layer (102) comprises a bendable LED film configured to display dynamic content when powered on, while remaining completely concealed when off, thus preserving the decorative surface aesthetics. A bottom support layer (103) formed from unfired kaolin clay mixed with functional additives provides thermal stability, hydrophobicity, and structural flexibility. The panel is powered via an integrated electrical interface (104) and exhibits a total thickness of approximately 5 mm (106). The invention enables modular, weather-resistant, and non-intrusive display surfaces for architectural, signage, or ambient media applications.

No. of Pages : 18 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/11/2025
(21) Application No.202521113232 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Hybrid Algorithms Integrated with PCA For Prediction of Epileptic Diseases on Machine Learning

(51) International classification	:H04N 19/52, H04N 19/503, H04N 19/593, G10L 19/13, B60W 30/095
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Priyanka Singh
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(57) Abstract :
A Hybrid Algorithms Integrated with PCA For Prediction of Epileptic Diseases on Machine Learning Epilepsy is a neurological disorder characterized by sudden and recurrent seizures, often caused by abnormal electrical activity in the brain. Accurate and timely prediction of epileptic seizures is vital for effective patient care and clinical decision-making. This research proposes a Hybrid Machine Learning Model integrated with Principal Component Analysis (PCA) for efficient and precise prediction of epileptic diseases. PCA is employed to reduce data dimensionality and eliminate redundant features from EEG signal datasets, thereby enhancing model performance and computational efficiency. The hybrid framework combines multiple classifiers—such as Support Vector Machine (SVM), Random Forest (RF), and K-Nearest Neighbor (KNN)—to leverage their complementary strengths in classification and pattern recognition. Experimental evaluation demonstrates that the proposed PCA-based hybrid model achieves higher accuracy, sensitivity, and specificity compared to traditional single-algorithm approaches. The results confirm that integrating PCA with a hybrid ensemble of classifiers significantly improves epileptic seizure prediction while minimizing processing time and data complexity. This study highlights the potential of hybrid machine learning models as reliable tools for automated diagnosis and early detection of epileptic disorders, contributing to the advancement of intelligent healthcare systems.

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/11/2025
(21) Application No.202521113459 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ELECTRIC REAPER

(51) International classification	:A01D69/02, A01D34/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT ELECTRIC REAPER An electric reaper (10) for harvesting crops is provided. The electric reaper (10) includes a main frame (14) having a front end (28), a middle portion (30), and a back end (32). A first drive system (22) is coupled with a set of wheels (26) for movement of the electric reaper (10), while a second drive system (24) mounted at the front end (28) is configured for operating an implement (12) independently of the first drive system (22). A control unit (18) is connected to the first drive system (22) and the second drive system (24) and is configured to regulate their independent operation based on inputs received from input means (16) positioned at the back end (32) of the main frame (14). A rechargeable battery is used as a power source (20) to power the first drive system (22) and the second drive system (24). [FIG. 2]

No. of Pages : 30 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202521121605 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED SMART SYSTEM FOR MICROPLASTIC DETECTION AND FILTRATION USING WHITE AND UV LIGHT IMAGING.

(51) International classification	:G01N 21/33, G01N 21/64, G01N 1/40, G01N 15/06, G01N 21/359
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This project presents an integrated microplastic detection and filtration system that combines optical sensing, deep learning, and multi-layer filtration for efficient water quality monitoring and purification. Water samples are analyzed directly in a detection module, where 365 run UV illumination induces polymer fluorescence, allowing a USB microscope and Raspberry Pi to capture and process high-resolution images. Using the YOLO deep learning model, the system performs real-time detection, classification, and quantification of microplastics. Simultaneously, the main water flow passes through a three-layer filtration unit consisting of jute felt (50 microns), 120 mesh nylon (100-125 microns), and 400 mesh nylon (25-37 microns), ensuring progressive mechanical removal of microplastic particles of varying sizes. Controlled by a microcontroller-based module, the system maintains optimal flow and safety through continuous feedback from a pressure sensor (HX711) and a flow sensor (YFS401), automatically adjusting pump speed to prevent filter clogging. This dual-process design enables both purification and live verification of microplastic contamination, providing a cost-effective, automated solution for environmental water analysis and treatment.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202521121666 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DYNAMIC SENSOR GRID ARRAY WITH FAULT TOLERANT DATA REPAIR.

(51) International classification	:G06F 11/00, G06F 11/07, G06F 11/10, G01P 21/00, G06F 11/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The current invention is a repair system for the real-time physiological data monitoring such as the electrocardiogram (ECG), heart rate (HR), blood pressure (BP), and oxygen saturation (SpO2). In addition to continuously retrieving data from the sensors, it instantly validates each reading to look for any anomalies, loss, or corruption. When data is missing or corrupted or inconsistent, the system automatically generates the replacement or the correct values by using algorithmic methods such as synthesizing the ECG waveform from the correlated HR and BP measurements, deriving the heart rate from the ECG signals, and estimating from the historical trends. Reed-Solomon error-correcting codes are used for non-critical sensors to identify and fix data corruption instantly. In the event of multiple sensor failures, a historical buffer preserves recent valid readings to allow for fallback reconstruction, guaranteeing continuous monitoring without the need for human intervention. In order to verify the repair process, the system additionally offers real-time visualization and logging of both original and reconstructed data. The invention optimizes patient safety and reliability in clinical and remote monitoring applications by reducing false alarms and providing robust, high-fidelity vital sign monitoring through the integration of sensor acquisition, real-time validation, error correction, and data reconstruction.

No. of Pages : 9 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202521121518 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CLEANSIGHT; A DUAL-VERIFICATION AI AND GEO-INTELLIGENCE FRAMEWORK FOR URBAN WASTE MANAGEMENT.

(51) International classification	:B09B 3/00, B09B 1/00, C04B 18/30, C04B 18/16, C09K 8/524
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention, called CleanSight, relates to a computer-based framework for municipal waste complaint management that combines artificial intelligence with geospatial intelligence. The system accepts user complaints with geotagged images, verifies garbage presence using a CLIP-based deep learning model, and automatically assigns each complaint to the correct ward and Muqaddam region using polygon-based digital maps. Verified complaints are displayed on role-based dashboards for Supervising Inspectors, Muqaddams, and workers, enabling digital assignment and tracking of cleaning tasks. After cleanup, workers upload post-cleanup images with GPS coordinates, and a dual-verification mechanism confirms that the site is visually clean and that the cleanup location matches the original complaint location within a specified radius before marking the complaint as resolved. This integrated approach improves verification reliability, spatial assignment accuracy, and transparency compared to conventional manual complaint-handling systems.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202521121522 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CHAMELEON-AI

(51) International classification	:A01G 9/02, A01G 7/06, C12N 15/09, A01G 1/00, C12N 5/07
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A unified multi-task framework named Chameleon-AI for simultaneous blind face restoration, face inpainting, and video colorization with temporal coherence. The framework modifies the Stable Video Diffusion architecture by incorporating task-specific embeddings, unified latent regularization, facial prior learning through landmark prediction, and a self-referred refinement mechanism that ensures smooth temporal consistency across frames without requiring explicit optica! flow computation. Identity preservation is achieved through reference-based identity encoding, while shared latent representations enable all three tasks (restoration, inpainting, and colorization) to be performed efficiently within a single model. The unified design reduces computational overhead by approximately 67% compared to running separate task-specific models sequentially, while delivering superior quality and identity fidelity. The framework includes a practical web-based deployment that allows users to upload degraded videos and receive temporally coherent, high-quality restored outputs suitable for historical footage restoration, low-quality video enhancement, and professional video editing applications.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202521121593 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BLOCKCHAIN-BASED VOTING VERIFICATION SYSTEM WITH TRIE HASH FUSION.

(51) International classification	:H04L 9/06, H04L 9/32, G07C 13/00, G06F 21/64, H04L 9/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Here's how it works: you've got a fingerprint-verified voting system powered by a Trie Hash Fusion engine, and if you want, you can anchor everything on a blockchain. The R 307 sensor and Arduino team up to check fingerprints right on the device, then spit out either "VOTER:" or "NO_MATCH." A Python script passes those results over to a Node.js backend. That backend keeps an enrolled allowlist, stops duplicate entries, and makes sure nobody votes twice. Every time someone authenticates, C++ code updates a Trie's root hash. If you want extra transparency, the frontend connects to MetaMask so you can anchor that hash on Ethereum Sepolia. So you get a voting system that's biometric, Trie-powered, and blockchain-ready—a real, tamper-evident digital EVM that you can actually verify.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202521122443 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART VERTICAL FARMING MONITORING SYSTEM USING IOT AND CLOUD.

(51) International classification	:G06Q 50/02, H04L 29/08, A01G 9/24, G06Q 50/10, G05B 19/418
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The following outlines a new approach to controlled indoor agriculture with a vertical approach, leveraging the compatibility of inexpensive open-source hardware for unsophisticated logic that completely operates offline. The project provides a straightforward means to field continuous and real-time useful ecological variables. The hardware at the core project is an Arduino Uno with a capacitance soil moisture sensor, LDR, and DHT11 that components can be used to record and measure important ecological variables, manage irrigation to limit drought stress and over saturation in all plants, and schedule supplemental lighting by the user. The logged information is displayed to users as a 'living log' or, similar to physical hardware and computer code to operate within your own parameters. Living logging with private recorded environmental conditions or resource functionality or opportunity allows for an optimizable ideal growth practice in a person operating binary for their practice. Local data enabled visualization with physical control ensures the continuance of user empowerment because the practice is never totally reliant on useful cloud services or any complex network to facilitate meaningfully valuable modifications to existing algorithms. Indoor farming can retain affordablility, accessiblility, and replication when basic explanatory automation is instilled into prescriptive hardware.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202521122484 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EYE DISEASE DETECTION SYSTEM USING EXPLAINABLE AI .

(51) International classification	:A61B 3/113, A61B 3/10, A61B 3/14, A61B 3/00, G06N 3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention presents an Explainable AI (XAI)-based system for the detection and analysis of eye diseases using retinal and ophthalmic images. The system integrates interactive portals for doctors, patients, and researchers, facilitating a collaborative and transparent healthcare ecosystem. Leveraging advanced AI models such as CNNs and Transformers, along with explainability techniques like Grad-CAM, LIME, and SHAP, the system provides interpretable visual insights that enhance trust in automated diagnostics. Patients can upload images, interact with a Gemini API-based chatbot, and manage prescriptions through an automated OCR-driven analysis that organizes medication by days, dosage, and time. Doctors can review AI-generated reports and provide prescriptions, while researchers gain access to anonymized datasets and model performance analytics. Secure cloud storage ensures data privacy and enables research without compromising sensitive information. Overall, this system aims to improve diagnostic accuracy, patient engagement, and clinical decision-making while advancing research in ophthalmology through explainable AI.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202521122505 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REAL TIME PHYSICAL INTRUSION DETECTION USING AVL TREE.

(51) International classification	:H04L 29/06, G06F 21/55, G06F 21/00, H04L 9/00, H04L 9/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention describes a Physical Intrusion Detection System that detects unauthorized motion, notifies you via a web-based user interface, takes photos, and logs the activity immediately. The system employs IR sensors connected to an Arduino Uno to detect motion and a camera module as a photo-based source of visual evidence. The backend software is written in C++ and uses an AVL tree to store intrusion activity to make sure that the data will stay balanced and not over time degrade. The user interface is a simple web page that live-updates to display the data, events, and photos, as they occur in real-time. The system demonstrates a simple, effective, and reliable intrusion detection system that provides a smart, inexpensive intrusions detection system that captures physical intrusions in real-time to improve tracking capabilities in homes, labs, and institutions.

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/11/2025
(21) Application No.202521117728 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A High-Efficiency Wind Energy Generation System Using Multifold Twisted Spin-Wheel Wings

(51) International classification	:F03D1/06, F03D9/25, F03D13/10, F03D13/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a high-efficiency wind-energy generation system utilizing a large-diameter spinning rotor equipped with multiple twisted wings designed to capture and redirect wind pressure rather than cut through airflow as in conventional turbine blades. Each wing is fabricated from lightweight fibre-reinforced polymer (FRP) and incorporates a folded, pressure-capturing geometry that blocks, traps, and channels incoming wind to produce high rotational torque, even under low wind-speed conditions. The wings are circumferentially mounted on a central aluminium hub connected to a vertical main shaft that drives a turbine or generator assembly positioned within or beneath a tower structure. Owing to its significantly enlarged wind-contact surface area—up to twenty times greater than traditional turbine designs—the system achieves rapid startup, stable high-speed rotation, and enhanced electrical power output. The structure further facilitates simplified transportation, reduced vibration, and improved operational durability. The invention provides a scalable, cost-effective, and efficient alternative to conventional wind turbines, particularly suited for low- and moderate-wind regions.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2025

(21) Application No.202521120662 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "OFFLINE VOICE-BASED USER AUTHENTICATION SYSTEM AND METHOD FOR ANDROID MOBILE DEVICES".

(51) International classification	:G10L 17/24, G10L 17/02, G06F 21/32, G10L 25/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)DR. CHARANSING N. KAYTE

(57) Abstract :
An Intelligent, Offline Voice-Based User Authentication System and Method (AMUA) for Android mobile devices is disclosed. The invention performs combined text-dependent speaker verification and password verification entirely locally, ensuring high speed, low latency, and enhanced privacy without requiring internet connectivity. The system registers a user by extracting and securely storing a unique voiceprint template based on Mel-Frequency Cepstral Coefficients (MFCC) from a fixed spoken passphrase (supporting multilingual input like Marathi). Authentication is achieved by calculating the cosine similarity between the stored template and a feature vector derived from the test input. Access is granted if the similarity exceeds a predefined threshold, providing a secure, accessible, and resource-efficient solution for mobile device locking, e-governance, and banking applications.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202521123436 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SINGLE CYCLE RISC-V PROCESSOR.

(51) International classification	:G06F 9/38, G06F 9/30, G06F 9/32, G06F 9/22, G06F 9/318
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)AKHILESH RAMESH MANE
4)MEDHA VISHWANATH WYAWAHARE
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(57) Abstract :
This invention presents a Single-Cycle RISC-V Processor, a 32-bit processor architecture designed to execute every instruction within a single clock cycle, achieving high performance with minimal hardware complexity. The processor adheres to the open-source RISC-V instruction set architecture (ISA) and integrates core components such as the program counter, instruction memory, control unit, register file, arithmetic logic unit (ALU), data memory, and immediate generator into a unified data path. All control signals are generated through combinational logic, eliminating the need for microprogramming or pipelining. The design ensures deterministic execution, reduced latency, and ease of verification, making it highly suitable for embedded systems, FPGA implementations, and educational applications. The invention offers a scalable and efficient foundation for future processor enhancements and research in digital hardware design.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/10/2025
(21) Application No.202521103274 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "METHOD FOR DETECTION OF OVARIAN CANCER BIOMARKER USING CARBON QUANTUM DOTS"

(51) International classification	:G06F 17/50, G06F 17/30, G06F 19/00, G06F 3/01, G06F 17/18	(71)**Name of Applicant :** **1)D. Y. PATIL EDUCATION SOCIETY(DEEMED TO BE UNIVERSITY), KASABA BAWADA, KOLHAPUR** Address of Applicant :869,' E' D.Y. PATIL EDUCATION SOCIETY (DEEMED TO BE UNIVERSITY), D. Y. PATIL VIDYANAGAR, KASABA BAWADA, KOLHAPUR - 416006, MAHARASHTRA, INDIA. Maharashtra India (72)**Name of Inventor :** **1)PROF. DR. ARPITA PANDEY-TIWARI** **2)MS. PRANOTI A. KAMBLE** **3)PROF. DR. CHANDRAKANT DNYANDEV LOKHANDE**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present invention relates method for ovarian cancer biomarker detection by carbon quantum dots(CQDs). The invention is unique in detection of breast cancer biomarker using Antibody CA-125 conjugated L-CQDs from human serum samples. The ovarian cancer biomarker is detected by decrease in fluorescence intensity peak as monitored in fluorescence spectroscopy. The claimed ovarian cancer antigen detection method shows many advantages including label free, rapid, simple, cost-effective, high sensitivity which helps to overcome the limitations of high cost and time consumption exhibited by many other traditional clinical assays for cancer detection using biomarker from human serum.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/11/2025
(21) Application No.202521117887 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TOPICAL COMPOSITION FOR POST-DEPILATORY HAIR GROWTH RETARDATION

(51) International classification	:G11B 7/128, H03C 1/50, H03C 3/38, H03C 1/00, H03C 3/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(57) Abstract :
ABSTRACT TOPICAL COMPOSITION FOR POST-DEPILATORY HAIR GROWTH RETARDATION The present invention relates to a topical composition for post-depilatory hair growth retardation, comprising a synergistic blend of plant-derived and bioactive agents that modulate multiple stages of the hair growth cycle. The formulation includes at least one hair cycle modulator selected from anagen shorteners, catagen inducers, and telogen prolongers, and enzyme modulators targeting β-catenin and TGF-β pathways. Additionally, it incorporates angiogenesis inhibitors, androgen receptor modulators, and follicular structure disruptors, each present in effective concentrations to suppress follicular activity. The composition is delivered in a cosmetically acceptable base for safe, localized topical use. In vitro studies demonstrate downregulation of hair growthpromoting genes (e.g., catenin) and upregulation of regression markers (e.g., TGF-β1, BMP4), indicating potent inhibition of hair regrowth. The system offers a non-invasive, plant-based alternative to conventional methods, providing prolonged hair retardation with improved safety and user compliance.
No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202521123404 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PROACTIVE TRAFFIC SIGNAL OPTIMIZATION WITH MULTI-INTERSECTION COORDINATION USING VISION-BASED DEMAND FORECASTING

(51) International classification	:G08G 1/07, G08G 1/08, G08G 1/01, G08G 1/081, G08G 1/087
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Proactive Traffic Signal Optimization with multi-intersection coordination Using Vision-Based Demand Forecasting is an integrated, AI-driven system for real-time optimization of urban traffic signals using live video, deep learning, and multi-agent control. It combines high-resolution camera feeds with a YOLOv8 detector to estimate lane-wise vehicle counts, queue lengths, and densities with over 95% accuracy, and augments these measurements with LSTM-based forecasts of short-term traffic inflow so that controllers can anticipate demand surges rather than react only to current congestion. Each intersection runs a Deep Q-Network agent that selects signal phases at fixed decision intervals while exchanging summarized inflow/outflow data with neighboring intersections, creating coordinated green waves and reducing queue spillovers across the network. Deployed in a hybrid edge-central architecture, Proactive Traffic Signal Optimization with multi-intersection coordination Using Vision-Based Demand Forecasting executes perception and control on intersection-level edge devices with sub-200 ms decision latency, while a central server aggregates data, retrains models, and hosts a supervisory dashboard. Simulations on a sixteen-intersection (4x4) grid with 500-2,000 vehicles per hour per lane demonstrate 40-55% lower average waiting time, 35-45% higher throughput, and roughly 30-45% lower estimated fuel consumption than fixed-time and actuated controllers, making our system a practical, scalable candidate for next-generation smart city traffic management.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202521121098 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "AN ELECTROCHEMICAL METHOD FOR EARLY DENGUE DETECTION IN HUMAN SERUM".

(51) International classification	:G01N, C12Q 1/70, G01N 27/327, G01N 33/569, C12Q 1/68
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The mosquito species Aedes aegypti is the main vector of dengue infection transmission. All over the world dengue burden is increasing constantly. Most of the time, dengue goes undetected and misinterpreted as a normal fever. Dengue in humans can be lethal if not detected timely. Therefore, early and accurate detection of dengue virus is crucial for effective clinical management and reduction of disease burden. In this invention, A highly sensitive electrochemical biosensor for the detection of dengue NS1 protein in human serum using reduced graphene oxide/ gold (rGO/Au)composite thin film as the electrode material is developed. The reduced graphene oxide/ gold (rGO/Au) nanocomposite thin film was synthesized by electrodeposition method, providing excellent conductivity, large surface area, and biocompatibility for biomolecule immobilization. The fabricated thin film electrode was employed for NS 1 detection. Cyclic voltammetry measurements revealed significant changes in charge-transfer resistance upon antigen binding, confirming successful detection. The biosensor exhibited a strong linear correlation between NS1 concentration and electrochemical response with an R2 value of 0.995, demonstrating excellent reproducibility and reliability. The limit of detection (LOD) was determined to be 0.40µg/ml, indicating high sensitivity for early-stage dengue diagnosis. Furthermore, the potential of this platform for rapid, user-friendly, and point-of-care diagnostics. This establishes the reduced graphene oxide/ gold (rGO/Au) thin film-based electrochemical biosensor as a promising candidate for clinical and field applications in dengue detection.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025

(21) Application No.202521124020 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI AND IOT-ENABLED AUTONOMOUS SMART TROLLEY SYSTEM FOR RETAIL AUTOMATION.

(51) International classification	:G06Q 10/08, G05D 1/02, G06Q 30/06, G06Q 20/20, B62B 3/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)HARSHIT ABHAY JAIN

(57) Abstract :
Retail shopping is evolving rapidly, with customers expecting faster, contactless, and hassle-free experiences. Traditional billing and manual scanning often cause long queues, errors, and frustration for both shoppers and staff. The Smart Trolley System tackles these issues by integrating IoT devices, sensors, cloud analytics, indoor navigation, and AI-driven inventory management into a single, automated shopping solution. Shoppers begin by registering through a membership card or mobile number and can set a personal budget before entering the store. As products are added, the inbuilt barcode/QR scanner instantly identifies each item, and a touchscreen display shows real-time details such as product name, price, total cost, and remaining budget—helping users manage spending effortlessly. The system also includes indoor navigation and smart product location guidance, allowing shoppers to quickly find items and explore available offers or alternatives within their budget. To maintain accuracy and security, the trolley is equipped with optical and infrared sensors that detect any unscanned or misplaced items, along with a weight sensor at the base to verify product consistency. An integrated AI camera cross-checks scanned products against the trolley's contents, ensuring that the physical items and billed items match. At the same time, Al-driven inventory management and cloud analytics enable the store to monitor stock levels, track customer preferences, and optimize restocking with greater accuracy. When shoppers are ready to check out, the system generates a QR code for instant UPI payment, removing the need for manual billing counters. A digital receipt is instantly delivered via SMS or app notification. At the exit gate, a final weight verification confirms that all billed items match the trolley's contents, ensuring full transparency and trust. By combining real-time scanning, navigation, billing, security, and intelligent inventory control, the Smart Trolley System transforms shopping into a smooth, autonomous, and customer-centric experience—minimizing effort, eliminating queues, and enhancing both convenience and operational efficiency.

No. of Pages : 12 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/12/2025
(21) Application No.202521124447 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEB APPLICATION FOR COLLEGE CLUBS.

(51) International classification	:A63B 53/00, A63B 53/04, A63B 53/10, G06Q 50/20, A63B 53/16	(71)**Name of Applicant :** **1)ANSHUL PATIDAR** Address of Applicant :VISHWAKARMA INSTITUTE OF TECHNOLOGY , 666, UPPER INDIRANAGAR, BIBWEWADI, PUNE, MAHARASHTRA, INDIA - 411 037. Maharashtra India **2)TANISHK AMBHORE** **3)RUTURAJ AMBURE** **4)TEJAS ANDHARE** **5)ANURAG YADAV** **6)ANUSHREE MUTHUKUMAR** **7)PROF DR. VAISHALI RAJPUT**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	(72)**Name of Inventor :**
(33) Name of priority country	:NA	**1)ANSHUL PATIDAR**
(86) International Application No	:NA	**2)TANISHK AMBHORE**
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(87) International Publication No	: NA	**4)TEJAS ANDHARE**
(61) Patent of Addition to Application Number	:NA	**5)ANURAG YADAV**
Filing Date	:NA	**6)ANUSHREE MUTHUKUMAR**
(62) Divisional to Application Number	:NA	**7)PROF DR. VAISHALI RAJPUT**
Filing Date	:NA	

(57) Abstract :
The invention presents a centralized web-based platform designed to simplify and enhance the management o college clubs and student engagement activities. The system enables seamless access to club information, even schedules, announcements, and membership processes through a user-friendly interface. It automates communication and event notifications, ensuring students receive timely updates and do not miss participation opportunities.The platform supports club leaders and administrators by offering digital tools for managing memberships, processing approvals, and promoting events efficiently. A conflict-free scheduling system and interactive event calendar help optimize event planning across the campus. Additionally, built-in analytics track participation trends and club performance to assist in informed decision-making.By integrating all key operations into a single secure platform, the invention reduces manual workload, eliminates fragmented communication channels, and improves transparency in club administration. This system significantly enhances studen involvement, operational coordination, and overall campus engagement, making it a scalable and reliable solution for educational institutions.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/12/2025
(21) Application No.202521124610 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VIDEO CALL INTERCOM SYSTEM WITH REAL-TIME SIGN LANGUAGE RECOGNITION AND TACTILE FEEDBACK.

(51) International classification	:H04N 7/14, H04M 9/00, G09B 21/00, H04N 7/18, G06F 3/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention introduces an integrated and cost-effective video call intercom system designed to enable accessible, real-time communication between sign-language users and verbal communicators. The system incorporates a vision-based sign language recognition module that operates using standard camera input to extract hand landmarks, generate feature vectors, and convert gestures into text without requiring specialized hardware. Alongside this, a browser-native speech-to-text module provides rapid transcription of spoken communication, allowing seamless bidirectional translation between sign language and speech. A microcontroller-based tactile alert mechanism, utilizing a vibration motor and PWM-driven patterns, delivers reliable non-visual notifications for incoming calls and messages. This ensures that users with hearing impairments receive timely alerts even when visual cues are missed. The system operates entirely through a web-based architecture, enabling compatibility across common devices while reducing installation complexity and hardware dependency. By combining computer vision, speech processing, web communication capabilities, and tactile feedback within a single platform, the invention addresses limitations in current communication systems such as insufficient sign-language support, reliance on interpreters, and the absence of non-visual alert mechanisms. The modular and scalable design allows deployment across homes, healthcare settings, educational institutions, workplaces, and public service centres. The invention significantly enhances communication accessibility and inclusivity for individuals with hearing impairments.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/12/2025
(21) Application No.202521124630 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ELDERLY PERSON ACTIVITY DETECTION FALSE FALL AVOIDANCE.

(51) International classification	:G08B 21/04, G08B 21/02, G08B 25/01, A61B 5/11, G08B 25/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an AI-enabled wearable system for real-time fall detection, activity monitoring, and preventive health support for elderly individuals. The invention integrates dual MPU6050 motion sensors with machine-learning models to classify daily activities such as walking, sitting, sleeping, and falling, thereby enabling accurate detection of abnormal motion events and timely safety intervention. The system operates through a multi-stage architecture comprising sensor data capture, feature extraction, AI-based activity classification, fall-event recognition, and emergency alerting. The data capture unit continually records synchronized accelerometer and gyroscope signals from sensor modules placed strategically on the user's body. This ensures seamless and continuous acquisition of motion information without requiring cameras or microphones, thereby preserving privacy and enhancing portability. The feature extraction module processes each sensor stream independently. Accelerometer signals are analyzed for linear acceleration, posture transitions, and impact strength, while gyroscope signals capture angular velocity, rotational shifts, and sudden orientation changes. These processed features are then used as inputs to a Feedforward Neural Network (FNN) for multi-class activity recognition and a Random Forest classifier for distinguishing true falls from rapid but non-harmful movements. Each model generates classification outputs that collectively determine the user's current activity state. In the event of a detected fall, the system activates an automated emergency response mechanism that sends alerts via SMS or mobile application to preconfigured caregivers, optionally including GPS location data. This ensures rapid assistance even in situations where the user is unable to respond or where internet connectivity is unavailable. The integrated mobile interface provides real-time visualization of activity logs, posture trends, and fall histories, enabling caregivers to track user behavior and detect risk patterns. The system also incorporates preventive-health functionality, generating posture-correction prompts and personalized exercise recommendations based on clinically supported fall-prevention guidelines. A key aspect of the invention is its privacy-preserving and offline-capable design. Unlike camera-based monitoring systems that require continuous visual recording, the proposed wearable processes all motion data locally on the device and stores only derived numerical features, ensuring user confidentiality and operational reliability in diverse environments. In summary, the proposed Al-enabled Fall Detection and Prevention System provides an advanced, automated, and user-centric solution for elderly safety. It reduces caregiver burden, enhances emergency responsiveness, and offers proactive health recommendations, establishing a strong foundation for intelligent, data-driven elderly care and long-term fall-risk reduction.

No. of Pages : 9 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202521121671 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SECURE ADAPTIVE HUFFMAN COMPRESSION-DECOMPRESSION VISUALIZER.

(51) International classification	:H03M 7/40, G06T 9/00, H04N 7/26, H04N 7/30, H04N 1/41
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides a Secure Adaptive Huffman Compression-Decompression Visualizer that combines lossless compression, cryptographic encryption, and interactive data visualization in a single web-based software system. The system generates a Huffman tree dynamically, displays encoding steps, and secures output files using AES encryption, offering both educational and practical applications in data processing and cybersecurity.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202521121687 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ACCENT IDENTIFIER AND CONVERTER USING AI.

(51) International classification	:G10L 13/00, G10L 13/02, G10L 13/10, G10L 13/033, G10L 13/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The system described in this invention uses artificial intelligence to detect and transform spoken accents. The system takes speech input to identify the accent before it transforms the speech into a different accent that maintains the original speaker's voice characteristics. The system operates through self-supervised models and deep learning to achieve efficient speech feature extraction and transformation. The system functions in real-time for applications in communication systems and educational settings and assistive technologies to enhance speech recognition between different accent groups.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202521121704 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GEOTAGGED DATA AGGREGATOR FOR WEATHER & CLIMATE DATA COLLECTION AND ANALYSIS.

(51) International classification	:G06F 17/30, G01W 1/10, G06F 17/00, G06F 7/00, G06F 16/29
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention is a system for real-time collection, aggregation, and visualization of geo-tagged weather data. An ESP32 with a BMP 180 sensor records temperature, pressure, and GPS coordinates, storing the data in CSV format. A backend constructs segment trees to efficiently compute range-based aggregates, which are displayed via a web interface with temporal and geospatial visualization. The system provides an automated, scalable solution for analyzing weather trends across time and location.

No. of Pages : 12 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202521121768 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN MULTI-AGENT SMART-FARMING SYSTEM WITH BLOCKCHAIN SUSTAINABILITY TRACKING AND MULTILINGUAL VOICE INTERFACE

(51) International classification	:G10L 15/22, G10L 15/26, G06Q 20/38, H04L 9/06, H04L 9/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Smart farming system integrating 17 AI agents for crop management, blockchain-based sustainability tracking, and multilingual voice interface. Lead orchestration agent coordinates specialists analyzing soil moisture, pH, temperature, humidity, nitrogen, and light data. Provides unified recommendations through conflict resolution. Blockchain records actions and awards green tokens for sustainable practices. Voice interface supports English/Hindi/Marathi. Achieves 2s response time, 95%+ accuracy. Deployed via FastAPI backend and React frontend with SQLite database.

No. of Pages : 28 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/12/2025

(21) Application No.202521125075 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SORBITOL PRODUCTION USING WASTEWATER-DERIVED GREEN HYDROGEN

(51) International classification	:C25B3/07, C25B3/20, C25B11/073, C25B11/075, C25B11/089, C25B3/25, C02F1/461, C02F1/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This disclosure relates to an integrated sorbitol production process utilizing hydrogen generated directly from starch-processing wastewater. Dextrose is subjected to catalytic hydrogenation in the presence of a Raney nickel catalyst and a magnesium promoter under controlled elevated temperature and pressure. Industrial wastewater containing high total dissolved solids, suspended particulates, and organic load is pre-filtered and electrolyzed using an impurity-tolerant electrolyser to produce process-grade hydrogen without complete desalination. The generated hydrogen is compressed, stored in a buffer vessel, and supplied as the primary hydrogen source to the hydrogenation reactor. Automated control logic enables seamless switching to compressed hydrogen cylinders based on buffer pressure or flow-demand thresholds, ensuring continuous operation. The process simultaneously delivers commercial-scale sorbitol production, effluent valorisation, reduced fossil-hydrogen dependency, and lower carbon footprint, representing a circular and energy-efficient pathway for sustainable starch-industry chemical manufacturing.

No. of Pages : 17 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/01/2025
(21) Application No.202521001851 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PASSIVE KEYLESS ENTRY SYSTEM AND METHOD OF OPERATION THEREOF

(51) International classification	:G07C0009000000, B60R0025240000, H04B0003040000, A61B0017320000, E21B0049000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT PASSIVE KEYLESS ENTRY SYSTEM AND METHOD OF OPERATION THEREOF The present disclosure describes a Passive Keyless Entry (PKE) system (100), the system (100) comprises, a control unit (102), a wireless transmitter unit (104) communicably coupled with the control unit (102) via a wired communication medium; and a user device (106) communicably coupled with the wireless transmitter unit and the control unit via the wireless communication medium. Further, the control unit is configured to authenticate a message received from the user device (106) via at least one encryption key. Furthermore, the at least one encryption key is exchanged between the wireless transmitter unit (106) and the control unit (102) over the wired communication medium prior to transmission of the message over the wireless medium. FIG. 1

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/11/2025
(21) Application No.202521116869 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : STIMBIOTIC FEED SUPPLEMENT FOR POULTRY AND PROCESS OF PREPARATION

(51) International classification	:D01B 1/02, A23N 4/24, A01C 1/08, A01C 7/10, C01B 39/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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7)Mr. PRAFUL DADHE

(57) Abstract :
ABSTRACT STIMBIOTIC FEED SUPPLEMENT FOR POULTRY AND PROCESS OF PREPARATION The present subject matter provides a stimbiotic feed supplement for adding to poultry feed and a process for producing the poultry feed supplement from seed waste biomass source, the seeds consist of any one or a combination of sapota (Manilkara zapota), tamarind (Tamarindus indica) Indian gooseberry or amla (Emblica officinalis) and date (Phoenix dactylifera) Kanan Puranik IN/PA 1098 Patent Agent for the Applicant

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/12/2025
(21) Application No.202521124936 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Slew Rate Enhanced Two-Stage Operational Amplifier Using Transient-Aware Tail Current Modulation.

(51) International classification	:H03F 3/45, H03F 1/30, H03F 1/02, H03F 1/32, H03F 1/34
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention provides a circuit and method for enhancing the slew rate of an operational amplifier (opamp) during transient conditions without altering its steady-state performance or frequency compensation characteristics. More particularly, the present invention introduces a transient detection mechanism configured to monitor the input of the operational amplifier and generate a control signal in response to a rapid input change. This control signal temporarily modifies the tail current path of the input differential stage by bypassing or grounding the tail node, thereby enabling the conducting input transistor to deliver an increased transient current based on its transconductance and overdrive voltage. The enhanced current rapidly charges or discharges the load or compensation capacitor, resulting in a significantly improved slew rate during transient intervals. It can be seen from the results that the present invention achieves a 15x and 4.7x improvement in the positive and negative slew rates respectively when compared to the conventional opamp. The present invention is architecture-agnostic and applicable to a wide range of opamp topologies, including single-stage, telescopic, folded cascode, two-stage, and multi-stage designs. The enhancement mechanism is active only during signal transitions, ensuring minimal impact on static power dissipation, DC gain, and phase margin. This approach offers a scalable, low-power, and process-compatible solution for high-speed analog and mixed-signal applications. Figure-2

No. of Pages : 17 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202521122558 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT CIVIC SANITATION AUTOMATION SYSTEM USING AI, PREDICTIVE DISPATCH, AND BLOCKCHAIN VERIFICATION

(51) International classification	:G06Q 10/06, G06Q 50/26, H04L 9/06, H04L 9/32, G06N 20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)PROF DR. VAISHALI RAJPUT

(57) Abstract :
The invention provides an intelligent civic sanitation management system that automates the complete process of waste reporting and cleanup using AI, optimization, and blockchain technologies. The system classifies waste from user-submitted images, removes duplicate reports through multimodal analysis, and assigns the most suitable NGO based on distance, availability, workload, and service performance. It predicts future waste hotspots using spatiotemporal data and generates optimized routes for cleanup teams using real-time traffic and priority conditions. All workflow events, including report submission, assignment, on-site actions, and cleanup completion, are securely recorded on a blockchain to provide tamper-proof verification and transparent audit trails. The system enhances sanitation accuracy, reduces response time, improves resource utilization, and supports reliable, scalable operations for smart cities and municipal authorities.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/12/2025
(21) Application No.202521125926 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI ECU BASED ARCHITECTURE FOR IMPROVED TWO WHEELER PERFORMANCE AND SAFETY

(51) International classification	:B60R 16/023, B60R 16/02, B62D 6/00, B60G 17/015, B60R 16/037
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)SAMRAH SAYYED
4)HARSHALI ZODPE
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6)MANISHA KUMAWAT

(57) Abstract :
The present invention relates to a multi-ECU based control architecture (100) for an electric two-wheeler in which multiple specialized Electronic Control Units collaboratively manage distinct vehicle subsystems. The architecture includes a main ECU configured to coordinate inter-ECU communication and process system-level data, a powertrain and engine control ECU configured to regulate fuel injection, ignition timing, and RPM sensing, a battery and power management ECU configured to perform battery monitoring, charge protection, and thermal control, a safety module ECU configured to handle tilt monitoring, fall detection, collision-related alerts, and emergency braking assistance, and a rider interface ECU configured to manage display functions, speed indication, indicator alerts, and Bluetooth connectivity. A shared CAN or LIN communication bus enables real-time data exchange, and each ECU incorporates a fault-detection mechanism, while the main ECU further supports field-upgradable and over-the-air firmware updates.

No. of Pages : 20 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/12/2025
(21) Application No.202521125927 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VAT POLYMERIZATION 3D PRINTED SOLID OXIDE FUEL CELL WITH 10YSZ ELECTROLYTE

(51) International classification	:H01M 4/86, H01M 8/12, H01M 8/1246, H01M 4/90, H01M 8/1213
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)SACHIN RATNAKAR DESHMUKH

(57) Abstract :
The invention relates to a method (100) for fabricating a solid oxide fuel cell using a vat-polymerization stereolithography process to produce a precision-formed electrolyte layer from a photocurable composite resin. In this method, a photocurable clear resin is mixed with 10 mol% yttria-stabilized zirconia (10YSZ) powder to obtain a uniformly dispersed printable electrolyte resin, which is subsequently loaded into an SLA 3D printer for layer fabrication according to a predetermined CAD design. The printed electrolyte is UV-cured at controlled conditions to form a stabilized component, after which a nickel oxide anode paste is applied to one surface and a silver-doped strontium niobium cobaltite cathode paste is applied to the opposite surface to complete the cell structure. The process enables accurate electrolyte formation, improved layer consistency, and a simplified manufacturing workflow suitable for producing solid oxide fuel cell assemblies.

No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/12/2025
(21) Application No.202521127522 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INDIUM-MODIFIED COPPER ALLOY SYSTEMS WITH INERTIAL PASSIVATION FOR JEWELRY, STATUARY AND ARCHITECTURAL APPLICATIONS.

(51) International classification	:C22C 9/00, C22F 1/08, C22C 9/04, C22C 9/06, C22C 9/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)SOLANKI VIJAYKUMAR HARGOVANDAS

(57) Abstract :
A copper-based yellow alloy system and integrated manufacturing proc¬ess provide decorative articles that emulate 18-22 carat yellow precious-metal alloys while overcoming limitations of conventional brasses. The alloy com¬prises copper with controlled additions of zinc (4-12 wt.%), aluminum (3-8.5 wt.%), tin (0.8-2.2 wt.%), indium (0.1-1.0 wt.%), and silicon (0.08-0.9 wt.%), with composition constrained by a Chroma-Tuning Index CT and Dezincifica-tion Safety Ratio DZ to ensure precious-yellow color and corrosion resistance. A late-addition melting protocol introduces volatile zinc and indium under inert-gas shrouding to preserve compositional fidelity. Kinetic hardening through solution treatment and aging creates an auro-crystalline matrix containing co-herent nano-precipitates (5-50 nm), achieving 350-480 MPa tensile strength while maintaining specular reflectance. Inertial passivation forms a transpar-ent, self-healing AI2O3/TiO2 film (5-50 nm) providing long-term tarnish resis-tance without external coatings. The system enables production of hypoaller-genic jewelry, fine wire, investment castings, and architectural ornaments with superior aesthetic and functional performance at reduced cost.

No. of Pages : 37 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/12/2025
(21) Application No.202521127529 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NOVEL ARGENTUM-DOMINANT ALLOY COMPOSITIONS AND METHODS FOR ADDITIVE MANUFACTURING OF REFLECTIVE DECORATIVE OBJECTS AND APPLICATIONS.

(51) International classification	:C22C 30/00, B22F 10/28, C22C 19/05, C22C 19/03, B22F 10/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An argentum-dominant decorative alloy and manufacturing method for reli-gious statuary and architectural ornamentation. The alloy comprises argentum (62-80 wt%), platinum-group metals including rhodium, platinum, and palla-dium (1-18 wt%), copper (3-18 wt%), and aluminum (0.5-3.0 wt%). Processed via vacuum induction melting, controlled recrystallization, and electropolishing, the composition achieves optical reflectivity exceeding 96.5%, atmospheric tar-nish rate below 0.5 micrometers annually, and hardness of 135-270 HV. Rho-dium content exceeding 40% of total platinum-group metals forms protective Rh2O3/AI2O3 surface layers providing tarnish resistance superior to white gold (0.11-0.48 versus 0.30 μm/year) at 39-88% cost reduction. Embodiments in¬clude laser-welded gemstone jewelry, modular monumental statuary exceed¬ing 500 kg fabricated from precision-joined segments, and selectively laser-melted articles with internal lattice structures. The invention provides service life exceeding 35 years in urban environments for temple architecture and lux¬ury decorative applications.

No. of Pages : 29 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/12/2025
(21) Application No.202521127580 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CAKE PREMIX FORMULATION COMPRISING ROASTED WHOLE CHIA SEEDS AND PROCESS OF PREPARATION THEREOF

(51) International classification	:A21D 2/18, A21D 13/00, A21D 2/36, A21D 13/08, A21D 2/26
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Mr. Gaurav Shinde
3)Dr. Amit Kulthe
4)Dr. Nilesh Kardile

(57) Abstract :
The present invention relates to a cake premix formulation, comprising roasted whole chia seed powder in an amount of 10 % w/w to 30 % w/w of the formulation, wheat flour in an amount of 32 % w/w to 52 % w/w of the formulation, sugar in an amount of about 35 % w/w of the formulation, baking powder in an amount of about 1.27 % w/w of the formulation, baking soda in an amount of about 0.87 % w/w of the formulation, salt in an amount of about 0.17 % w/w of the formulation, one or more flavoring agents in an amount of about 0.69 % w/w of the formulation, and/or one or more additives including milk solids, cocoa powder, emulsifiers, stabilizers, improvers, and/or the like. In particular, the whole chia seeds are roasted at about 170°C for about 35 minutes. Figure 1

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/12/2025

(21) Application No.202521127993 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SANITO: AUTONOMOUS TOILET CLEANER.

(51) International classification	:A47L 11/40, A47K 11/02, A47L 11/24, G05D 1/02, E03D 9/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention is drawn to an automatically cleaning bowl device for public and private sanitation. The invention utilizes an Arduino Uno MCU that is responsible for a relay-triggered sequence process to flush the toilet, wash the seat and dry it. User presence is sensed by an FSR pressure sensor under a toilet seat and bowl water dirtiness with a turbidity sensor, to decide about flushing again.The cleaning process is performed by 9V DC water pump (to which a small pipe for washing the seat it connected), 12V solenoid valve (for flushing the bowl) and a 12VDC fan used to dry up. A speaker in the base bleeps when your clean is done and when it starts. The technology is modular, low-cost and easy to install - providing a reliable, no-touch solution in high use public spaces to maintain toilet hygiene.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/12/2025

(21) Application No.202521127994 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYBRID ENERGY OPTIMIZATION SYSTEM.

(51) International classification	:H02J3/38, H02J3/28, F03D9/11, F03G6/00, H02S10/00, F24S20/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)RIDDHI RAVINDRA KAULAGE

(57) Abstract :
The Hybrid Energy Optimization System is an automated model combining solar, wind, and hydro energy sources through a central energy reservoir. The system employs sensors, actuators, and a microcontroller to monitor environmental conditions and dynamically adjust each energy source for maximum efficiency. By balancing power generation among multiple renewable sources, the invention ensures continuous, stable, and eco-friendly energy production regardless of changing weather conditions.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/12/2025

(21) Application No.202521127997 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MOODMATRIX- AI POWERED STUDY COMPANION.

(51) International classification	:G09B 19/00, G09B 5/06, G09B 7/00, G09B 7/02, G09B 7/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention "MoodMatrix: AI-Powered Study Companion" is a real-time intelligent system that detects students' emotions, attention, and cognitive load by using AI-based video analysis. It enables dynamic teaching adjustments, emotion-aware study planning, and personalized learning enhancement. The system makes use of Jetson Nano hardware for edge computation, ensuring scalability, speed, and privacy. This invention bridges emotional intelligence with educational technology to improve classroom engagement and academic success.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/12/2025

(21) Application No.202521128083 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART DUSTBIN FOR AUTOMATED SEGREGATION OF WET, DRY, AND METALLIC WASTE.

(51) International classification	:B07C3/04, B07C5/02, B07C5/34, B07C5/38, B65F1/14, B65F1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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4)GRISHMA HAJIRNIS

(57) Abstract :
The present invention discloses an Arduino-based Smart Waste Segregation System that autonomously identifies and classifies waste into wet, dry, and metallic categories using an integrated network of sensors and actuators. The system employs an Infrared (IR) sensor to detect the reflective characteristics of dry waste, a Raindrop (moisture) sensor to determine the presence of wet or biodegradable waste, and a Metal Detection module to identify metallic objects through electromagnetic induction. An Arduino UNO microcontroller processes the data from these sensors and activates suitable electromechanical actuators, including a servo motor for operating a directional lid or flap mechanism, and a stepper motor with ULN2003 driver for rotating a multi-compartment tray. Based on real-time sensor input, the microcontroller directs each type of waste into its respective compartment automatically, without the need for manual intervention. The invention provides a low-cost, compact, and energy-efficient waste management solution that promotes hygiene, reduces human contact with waste, and improves recycling efficiency. Designed for scalability and ease of deployment, the proposed system can be effectively utilized in homes, institutions, offices, hospitals, and public spaces, thereby contributing to smart, sustainable, and eco-friendly waste management practices.

No. of Pages : 22 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/12/2025

(21) Application No.202521128465 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A COMPUTER-IMPLEMENTED MULTI-MODULE SYSTEM FOR AI-BASED CUSTOMIZATION, AUTHENTICATION, AND DYNAMIC COSTING OF LORD GANESHA IDOLS

(51) International classification	:H04L 9/32, G06Q 20/40, G06Q 20/38, G06Q 30/00, H04L 29/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The integration of Artificial Intelligence (AI) technology in digital commerce platforms has improved online customization and visualization systems. The present invention focuses on developing a secure and intelligent Ganesha idol-selling website that leverages AI for real¬time customization, image processing, and user interaction. The platform aims to enhance efficiency, reduce manual dependency, and provide an immersive shopping experience through AI-driven innovations such as real-time product visualization, image recognition, and smart customization features. The system incorporates advanced techniques including Ray Tracing and Phong Shading for realistic 3D model rendering, Histogram Matching and CycleGAN for dynamic color customization, and Mask R-CNN for modification and segmentation. The platform enables secure transactions, transparent pricing, and real-time customization using Blender Python API for enhanced visualization, making the purchasing process seamless, reliable, and user-friendly.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/12/2025

(21) Application No.202521128471 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTEGRATED MULTI-USER ONLINE PLATFORM FOR ONLINE CUSTOMIZATION, PRICING, AND SALE OF DECORATIVE RELIGIOUS HINDU IDOLS

(51) International classification	:G06Q 30/02, G06Q 30/06, G06Q 30/00, G06Q 20/20, G06Q 50/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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3)DR. VISHAL ARUN NAIK

(57) Abstract :
The present invention provides a multi-user digital platform for the manufacturing, customization, and sale of decorative idols. The system integrates three distinct login modules: (a) an idol maker (manufacturer) module for registering idols, uploading designs, and authenticating with a digital stamp, (b) a decorator module for adding colors, painting, and ornaments, and (c) a customer module that enables end-users to browse, customize idols in real-time with options such as size, color, and ornaments, and purchase the idols directly. The invention further comprises a dynamic pricing engine that calculates the final cost based on the base idol price, decoration cost, and ornamentation charges, ensuring transparency for the customer. A real-time 3D preview feature allows the customer to visualize customizations before purchase. The backend system manages authentication, workflow, and analytics, eliminating the need for customers to visit multiple vendors in person. This invention offers significant advantages, including time savings, transparency, improved artisan recognition, and a streamlined idol marketplace through a unified website and mobile application, also reducing traffic issues.

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/12/2025

(21) Application No.202521128541 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PRIVACY PRESERVING ENCRYPTED SEARCH ENGINE.

(51) International classification	:G06F 17/30, G06F 21/62, G06F 21/60, G06F 7/04, H04L 9/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention presents a fully privacy-preserving encrypted search system that enables accurate and fast querying with decrypting data. It employs a custom encrypted indexing and traversal mechanism combined with advanced cryptographic protection to achieve real-time secure search while preventing exposure of queries, metadata, or access patterns. It also creates vector embeddings in real time to aid with custom searches. The system operates seamlessly across both a secure Next.js web dashboard and an offline Raspberry Pi hardware device, ensuring complete data confidentiality in connected and also disconnected environments. By unifying efficient encrypted lookup, strong end-to-end encryption, and autonomous privacy-focused hardware, the invention delivers a practical, and high-performance solution to the long-standing challenge of achieving truly private information retrieval, with certain additional functionalities.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202521123571 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : 'METHOD FOR PREPARING MAGNETITE-LACTOBACILLUS PLANTARUM NANOBIOTIC HYBRID FOR ANTICOLON CANCER ACTIVITY'

(51) International classification	:C12N 1/20, C12R 1/25, A61K 35/747, A23L 33/135, A61K 35/74
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)MS. APURVA PRADIP PATIL
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(57) Abstract :
This invention presents a method for preparing Lactobacillus plantarum loaded with magnetite nanoparticles (Fe3O4 nanoparticles) for anticolon cancer treatment. The Fe3O4 nanoparticles are successfully attached to the surface of L. plantarum, as confirmed by X-ray diffraction (XRD) and field emission scanning electron microscopy (FE-SEM). The anticancer activity of the Fe3O4 nanoparticles -L. plantarum nanobiotic hybrid was tested against HT29 colon cancer cells, showing significant inhibition of cancer cell growth. This novel approach uses the combination of probiotics and nanoparticles to improve cancer therapy by enhancing the targeting of tumor sites and minimizing side effects, offering a promising strategy for colon cancer treatment.

No. of Pages : 12 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/12/2025

(21) Application No.202521129131 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ECO SMART WATER PURIFIER:A SMART WAY TO GET FLUORIDE-FREE WATER.

(51) International classification	:C02F1/30, C02F1/44, C02F1/28, C02F1/32, C02F1/42, C02F3/32, C02F9/20, C02F101/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)DR. PUSHPA B. ZAMARKAR
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(57) Abstract :
The invention relates to an eco-friendly, multi-stage water purification system designed for efficient fluoride removal from contaminated water sources, particularly in rural and remote regions. The Eco Smart Water Purifier comprises three sequential chambers that integrate biological, natural, and physicochemical treatment mechanisms. The first chamber contains a novel combination of biological seeds, natural minerals, and herbal pellets that act synergistically to adsorb fluoride ions and improve raw water quality through natural, sustainable processes. The second chamber incorporates a Reverse Osmosis (RO) membrane for further dissolution-based de-fluoridation and removal of chemical impurities. The third chamber consists of an ultraviolet (UV) irradiation unit for effective microbial disinfection, ensuring pathogen-free potable water. The system operates with low maintenance requirements, reduced operational cost, and minimal environmental impact due to the use of biodegradable and natural adsorbent materials in the primary stage. This invention provides a cost-effective, sustainable, and user-friendly solution for household and community-level fluoride mitigation where conventional purification systems are economically or technically inaccessible.
No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/12/2025
(21) Application No.202521129148 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN BIDIRECTIONAL COMMUNICATION AID FOR INDIVIDUALS WITH SPEECH IMPAIRMENTS.

(51) International classification	:H04B 1/38, G10L 15/22, G10L 15/26, H04M 3/42, H04M 1/72412	(71)**Name of Applicant :** **1)DR. ANAGHA RATHKANTHIWAR** Address of Applicant :34, 'ANUKUL', GITTIKHADAN LAYOUT, PRATAP NAGAR, NAGPUR-440022, MAHARASHTRA INDIA. Maharashtra India **2)DR ABHIJIT D BIJWE** **3)DR. RAHUL PETHE** **4)MR. SAMEER EDLABADKAR** **5)MR. DINESH DILIP HALDAR** **6)MS. SIDDHI ANANTA RAMTEKE**
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(86) International Application No	:NA	**3)DR. RAHUL PETHE**
Filing Date	:NA	**4)MR. SAMEER EDLABADKAR**
(87) International Publication No	: NA	**5)MR. DINESH DILIP HALDAR**
(61) Patent of Addition to Application Number	:NA	**6)MS. SIDDHI ANANTA RAMTEKE**
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
The present invention discloses an AI-driven bidirectional communication system for speech and hearing-impaired individuals, deployed on Raspberry Pi hardware comprising Pi Camera, dual displays, microphone, speaker, and optional keypad, enabling real-time translation between natural ASL/ISL hand gestures and spoken/typed language without wearables or cloud dependency. A first module captures bare-handed alphabetic/numeric gestures via OpenCV video stream, MediaPipe 21-landmark extraction, and TensorFlow Lite CNN classification (90% accuracy for letters K/Y/J/G), rendering recognized symbols as 72pt text with gTTS phonetic synthesis on primary public display for non-impaired users. A complementary second module transcribes microphone input via SpeechRecognition/Whisper-tiny (15% WER) into phoneme-segmented letter sequences ("HELLO"→H-E-L-L-O), generating sequential ISL gesture animations (15fps skeletal avatars) on secondary private display for impaired users, with keypad fallback ensuring 100% fidelity in noisy environments. Flask APIs orchestrate bidirectional simultaneity (100ms latency), supporting modular ASL/ISL dataset switching, MQTT networking, and 4-6 hour battery operation suitable for RPwD-compliant Indian classrooms/clinics. The system overcomes unidirectional limitations of prior SGMTDs, flex-sensor gloves, and TTY/TDD relays through vision-centric, edge-deployable modality matching, facilitating inclusive education where student signs render as teacher-audible responses while spoken lectures visualize as private ISL sequences, with gesture logs enabling analytics.

No. of Pages : 26 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025
(21) Application No.202521124091 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PREPARATION, CHARACTERIZATION, AND BIOLOGICAL EVALUATION OF A CIPROFLOXACIN-BASED SUBSTITUTED 1,3,4-OXADIAZOLE DERIVATIVE

(51) International classification	:C07D 413/04, A61P 31/04, A61K 31/496, C07D 413/14, G01N 33/53
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The purpose of this research is synthesized and evaluates different derivatives of oxadiazole. A novel series of substituted 1,3,4-oxadiazole derivative were synthesized by condensing different amine with l-cyclopropyl-6-fluoro-7-(piperazin-l-yl]-3-(5-thioxo-4,5-dihydro-l,3,4-oxadiazol-2-yl)quinolin-4(lH)-one (III) in presence of formaldehyde. The structure of these novel synthesized compounds was characterized on the bases of physicochemical and spectral analysis. The title compounds (IVa-h] were screened for anti bacterial activity by disc diffusion method. Substituted 1,3,4-oxadiazole derivative were synthesized, characterized and evaluated for anti bacterial activity. Compounds IVa, IVd, IVe, IVf, IV h showed enhance activities then ciprofloxacin against all gram positive and gram negative organism. Compound IVe showed highest activity against Staphylococcus aureus and compound IV a showed highest activity against Escherichia coli. The present study demonstrate the synthesis and characterization of 1,3,4 oxadiazole derivatives derived from ciprofloxacin. These compounds were evaluated for anti bacterial activity against different gram positive and gram negative organism. In some cases, antibacterial activity is found to be enhanced as compared to standard drug ciprofloxacin.

No. of Pages : 12 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/12/2025
(21) Application No.202521129572 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PROCESS FOR EXTRACTION OF 5,7-DIHYDROXY-2-(3,4,5,6-TETRAHYDROXYPHENYL)CHROMENYLIUM-3-O-RHAMNOSIDE FROM SYNEDRELLA NODIFLORA AND PRODUCT THEREOF

(51) International classification	:A61K36/28, A61K127/00, A61K133/00, A61K135/00, C07H17/06, C07H7/06, C07H19/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT "PROCESS FOR EXTRACTION OF 5,7-DIHYDROXY-2-(3,4,5,6-TETRAHYDROXYPHENYL)CHROMENYLIUM-3-O-RHAMNOSIDE FROM SYNEDRELLA NODIFLORA AND PRODUCT THEREOF" Disclosed is a process for extracting 5,7-Dihydroxy-2-(3,4,5,6-tetrahydroxyphenyl)chromenylium-3-O-rhamnoside from Synedrella nodiflora, comprising the steps of: collecting fresh aerial parts of Synedrella nodiflora, shade drying, and grinding to a fine powder; extracting the ground powder with methanol to obtain an extract; concentrating the methanolic extract and dissolving the concentrated extract in a methanol: distilled water mixture for sequentially fractionating with petroleum ether, chloroform, and ethyl acetate; concentrating the ethyl acetate fraction, and subjecting it to column chromatography; collecting fractions from the column chromatography, analysing by TLC, pooling fractions based on similar TLC profiles, and concentrating the pooled fractions under reduced pressure; refrigerating the pooled fractions to induce crystallization; collecting the crystallized product identified as 5,7-Dihydroxy-2-(3,4,5,6-tetrahydroxyphenyl)chromenylium-3-O-rhamnoside of the following structure: 5,7-Dihydroxy-2-(3,4,5,6-tetrahydroxyphenyl)chromenylium-3-O-rhamnoside

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/12/2025

(21) Application No.202521129575 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : " SMART IoT-ENABLED SUGARCANE HARVESTING ROBOT "

(51) International classification	:A01D 45/10, B25J 11/00, B25J 5/00, A01D 34/00, A01D 45/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A smart IoT-integrated sugarcane cutting robot is disclosed for automating 5 sugarcane harvesting on small farms. The robot is a compact, four-wheeled device equipped with a front-mounted motorized circular saw blade that cuts cane stalks at the base. It is powered by a rechargeable battery for cordless operation. A Wi-Fi enabled microcontroller control unit allows remote operation via a smartphone app, enabling the user to drive and control the cutter from a safe distance. The robot 10 features an ultrasonic sensor for obstacle detection and safety shut-off, improving operational safety. Designed to be low-cost and lightweight, the robot addresses labor shortages and inefficiencies in manual harvesting. It offers reduced labor and time consumption, zero emissions, and a user-friendly interface, making sugarcane harvesting more efficient, safe, and economical for farmers.

No. of Pages : 25 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/12/2025
(21) Application No.202521125928 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT SHOPPING CART WITH QR AUTHENTICATION AND SECURE ACCESS WINDOW

(51) International classification	:B62B 3/14, B62B 5/00, G06Q 30/06, G06K 19/06, G06Q 20/40	(71)**Name of Applicant :** **1)DR. VISHWANATH KARAD MIT WORLD PEACE UNIVERSITY** Address of Applicant :SURVEY NO. 124, PAUD ROAD, KOTHRUD, PUNE, MAHARASHTRA – 411038 Pune Maharashtra India (72)**Name of Inventor :** **1)TRUSHITA CHAWARE** **2)ATHARVA HARSHE** **3)PARTH SHARMA** **4)NINAD PATERE** **5)ABDUR RAHMAN AMJAD PATHAN** **6)UJJWALA RAWANDALE** **7)VIBHA PATEL**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present invention relates to a smart shopping cart system (100) configured to regulate item entry and enable verified product handling during shopping. The system incorporates a Detection Module (210) for identifying barcodes scanned by a user, a Validation Module (212) for authenticating the scanned product information, and an Access Module (214) having a servo-operated flap that opens solely after successful validation to permit controlled item placement into the cart. An Alert Module (216) generates notifications when an attempt is made to insert an unverified product, while a Billing Module (218) updates billing information in real time based on validated entries. A Display Module presents item and billing details, and an Other Module performs auxiliary operational functions. By coordinating these modules, the system ensures selective item admission, prevents unscanned product placement, and facilitates accurate, transparent, and technology-assisted shopping operations.

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/12/2025
(21) Application No.202521129482 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD OF ARTIFICIAL INTELLIGENCE BASED TRAFFIC MANAGEMENT USING UNMANNED AERIAL VEHICLES

(51) International classification	:G08G 5/00, G08G 1/01, G08G 5/04, G06V 20/17, G08G 1/017
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)GORASIYA, Kashyap

(57) Abstract :
ABSTRACT OF THE DISCLOSURE SYSTEM AND METHOD OF ARTIFICIAL INTELLIGENCE BASED TRAFFIC MANAGEMENT USING UNMANNED AERIAL VEHICLES The present invention provides an aerial vehicle-based traffic management system and method thereof. In one embodiment, a method includes receiving a live video feed of vehicles on a road from an unmanned aerial vehicle. The method includes generating a plurality of image frames from the live video feed of the vehicles on the road, generating an enhanced multi-scale feature map corresponding to each vehicle on the road from the plurality of image frames, detecting a vehicle which violates a traffic rule by applying the enhanced multi-scale feature map to a trained artificial intelligence model, and determining a type of violation of the traffic rule by the detected vehicle. [To be published with FIG. 1]
No. of Pages : 38 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/12/2025

(21) Application No.202521129571 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “HYBRID NANO-IN-NANOFIBER TRANSDERMAL PATCH FOR DUAL-PHASE SUSTAINED RELEASE OF METFORMIN AND SITAGLIPTIN”

(51) International classification	:A61P7/12, A613/10, A61K9/127, B82Y5/00, B82Y30/00, B82Y40/00, A61K9/51, A61K9/1273
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Apurva Shelar Pawar

(57) Abstract :
A hybrid nano-in-nanofiber drug delivery platform for sustained antidiabetic therapy is disclosed. The invention relates to an electrospun nanofiber patch embedded with drug-loaded nanoparticles (solid lipid nanoparticles and/or niosomes) containing metformin and sitagliptin. This unique nano-in-nanofiber structure enables a dual-phase release: an initial controlled release of the drugs 10 followed by a prolonged, steady release, achieving stable therapeutic levels for at least 24 hours from a single patch. The nanofiber matrix (e.g., a PCL/PVA fiber blend) provides mechanical support and moderates the release, while the internal nanoparticles act as reservoirs that significantly extend the drug release duration. The result is a transdermal delivery system that bypasses first-pass metabolism, 15 reduces dosing frequency to once-daily, and minimizes plasma level fluctuations compared to conventional oral therapy. The patch is manufactured by co-electrospinning polymer solutions with pre-loaded nanoparticles, yielding fibers with uniformly embedded metformin-niosomes and sitagliptin-SLNs. This invention offers a novel formulation structure that co-delivers two antidiabetic 20 agents in a synergistic manner, improving patient compliance and glycemic control. The specification includes comparative data showing superior performance (reduced burst release, extended duration, higher encapsulation efficiency) relative to single-layer nanofiber or nanoparticle-only systems. Five independent claims define the composition, fabrication method, dual-release functionality, therapeutic 25 application, and the novelty of the nano-in-nanofiber architecture.

No. of Pages : 28 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/12/2025
(21) Application No.202521127581 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PROCESS FOR EXTRACTING SOLUBLE DIETARY FIBERS FROM POMEGRANATE (PUNICA GRANATUM L.) PEEL

(51) International classification	:A23L 1/308, A23L 33/21, A23L 33/22, A23L 33/00, A23L 19/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Anjali A. Bhoite

(57) Abstract :
The invention relates to a process for extracting soluble dietary fibers from pomegranate (Punica granatum L.) peel of Bhagwa, Ganesh and/or Phule Arakta varieties. The peel is cleaned to remove adhering pulp and extraneous matter, dried at 50°C to 70°C to reduce moisture content below 10% w/w, and pulverized to obtain a powder with a particle size of 60 µm to 80 µm. A slurry is formed by dispersing the powder in an aqueous medium containing 6% v/v acetic acid and 0.1 N sodium hydroxide to achieve 5% w/v solids. The slurry is autoclaved at 121°C for 15-20 minutes, subjected to high-hydrostatic pressure at approximately 400 MPa for 10 minutes at 30°C-35°C, and treated by pulse ultrasonication at 150 ± 20 W and 20 kHz for 15-20 minutes. The processed slurry is centrifuged, ethanol-precipitated, and freeze-dried to yield 45-50% w/w soluble dietary fiber. Figure 1

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/12/2025

(21) Application No.202521127658 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PRESCRIPTION RECOGNITION AND MEDICINE MANAGEMENT SYSTEM

(51) International classification	:G16H 20/10, G16H 20/13, A61J 7/04, G06Q 50/22, G06Q 50/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)RAJUL BAFNA
3)MANASVI DESHMUKH

(57) Abstract :
The present disclosure relates to an OCR and image recognition-based prescription and medicine management system (100) designed to accurately interpret handwritten prescriptions and manage corresponding medicines. The system includes an input module (502) configured to receive scanned or uploaded prescription images, an OCR engine (504) for text extraction, and a probabilistic matching unit (506) that identifies unrecognized medicine names using patient history and doctor specialization. A processing layer (406) cross¬checks extracted medicine data with a comprehensive medicine database (508) to retrieve dosage, manufacturer, availability and expiry details. A verification module (218) enables medicine box scanning to validate correctness against the prescription. The system further incorporates an audio output unit (408) for visually impaired users, a reminder scheduler (410), and an automated refill/order generator integrated with pharmacy inventory systems. The invention ensures improved prescription accuracy, enhanced accessibility, reduced dispensing errors, and optimized retailer inventory management.

No. of Pages : 26 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521129853 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Artificial Intelligence Based System and Method for Gamification and Personalization of Digital Content

(51) International classification	:G06F16/9535, G06F3/01, G06F21/60, G06N3/02, G06F40/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to an artificial intelligence-based system and method for gamification and personalization of digital content. The system receives digital content and segments the content into micro segments for analysis. The system identifies structural elements within the segmented content and identifies gamification points suitable for insertion of tasks, quizzes, rewards, decision branches, or other interactive elements. The system captures user behaviour signals during content consumption, including user pace, user navigation, user interaction, user performance, and user engagement. The system generates a user profile based on the behaviour signals and modifies content pacing, content difficulty, content sequence, or content format in real time. The system generates a personalized interactive content flow that is delivered across supported platforms. The method includes receiving content, analysing content, capturing behaviour signals, generating gamification elements, generating personalized flows, and modifying content in real time based on continuous behaviour signals.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521129887 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A THERMOSENSITIVE IN-SITU OTIC GEL COMPOSITION OF OFLOXACIN LOADED DEEP EUTECTIC SOLVENTS

(51) International classification	:A61K 9/00, A61K 9/06, A61K 47/00, A61K 47/34, A61K 47/36, A61K 47/30, A61K 47/38, A61P 27/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A THERMOSENSITIVE IN-SITU OTIC GEL COMPOSITION OF OFLOXACIN LOADED DEEP EUTECTIC SOLVENTS The present invention relates to a thermosensitive in-situ otic gel composition comprises ofloxacin loaded deep eutectic solvents (DESs). The transdermal gel composition comprises ofloxacin loaded deep eutectic solvents (DESs) enhances the solubility, permeability, stability, ensuring prolonged residence and sustained release. Further, the invention also provides a method for preparing the formulation and its use in the treatment of otitis media and related ear infections.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521129889 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An improved process for making lightweight hollow bricks from red mud – an industrial waste by-product

(51) International classification	:C04B 38/00, C04B 33/132, C04B 38/06, C04B 18/04, B28B 3/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT An improved process for making lightweight hollow bricks from red mud – an industrial waste by-product The present invention describes a process for making lightweight, low cost, thermally insulating, porous, hollow, sound proof bricks, having superior specific compressive strength, from red mud, which is an industrial waste produced from aluminum extraction industries. Red mud is crushed into powder and mixed with bentonite, sand and water, and rammed in a brick mould. A solid recyclable pattern is placed in the centre of the rammed mixture, which is then compressed and heated, such that the recyclable pattern melts and flows out of the brick. The mixture is then cooled and the brick is removed from the mould, followed by its firing at 600oC for 6 hours and then cooling at a slow rate to prepare the red mud bricks. This process is scalable for industrial production of the red mud bricks. Fig. 1

No. of Pages : 25 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521129894 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTEGRATED ML–DRIVEN STUDENT DIGITAL BEHAVIOR ASSESSMENT SYSTEM FOR SOCIAL MEDIA ADDICTION FORECASTING AND CYBERCRIME RISK EVALUATION

(51) International classification	:G09B 19/00, G06N 20/00, G06N 3/08, G06N 3/04, G09B 7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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9)Vidhya K
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12)Hemalatha R

(57) Abstract :
The present invention provides a development of the rising trend in the use of online 5 platforms has raised several concerns about the mental health and cybersecurity of teenagers. The authors have proposed the concept of the integrated ML-driven student digital behavior assessment system, which acts as a bi-fold model for social media addiction prediction analysis and the assessment of the risk of cybercrime. The system uses the efficiency of advanced machine learning techniques such as Random Forest and LSTM Networks. The 10 system uses anomaly detection techniques to detect addictive behaviors that appear early, while at the same time using prediction models that detect susceptibility to cyber-attacks, such as phishing and social engineering attacks. The outcome of the experiment shows that the combination of these tools is effective and has a high accuracy rate compared to the normal method that relies on surveys. The system is useful because it enables teachers and 15 mental healthcare practitioners to detect addictive behaviors early, thus contributing towards the creation of a safe online environment by closing the divide between monitoring behavioral health and proactively managing cybersecurity risks among students. FIG.1

No. of Pages : 13 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/12/2025
(21) Application No.202521128091 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADVPATCHXAI: A UNIFIED, RESILIENT, AND EXPLAINABLE ADVERSARIAL PATCH DETECTOR

(51) International classification	:G06T7/00, G06T5/60, G06T7/11, G06N3/08, G06N3/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Akshay Agarwal

(57) Abstract :
The invention relates to a system and method for detection of adversarial patches applied to images processed by deep learning models. The proposed method introduces patch-level decorrelation (104), dual-stage augmentation (102), prototype-based learning (107), and sparse constrained classification (206) that collectively achieves generalizable, resilient, and explainable patch detection. The system works across CNN-based and Transformer-based models and provides visual interpretability using prototype similarity and gradient-based activation localization. The invention addresses limitations of existing patch detectors and enables practical deployment in autonomous driving, surveillance, and other safety-critical domains. The method introduces a Patch Decorrelation Loss (104) that operates at patch-level feature granularity, ensuring distinct and decorrelated representations of patch features. This is supported by a dual-stage augmentation (102) strategy consisting of spatial transformations and grayscale-based intensity variations, enabling improved robustness to patch-induced discrepancies.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130299 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ARTIST TRAINING SYSTEM

(51) International classification	:G09B 5/06, G09B 19/00, G06Q 50/20, G09B 5/02, G09B 9/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Neel Dholakia

(57) Abstract :
An artist training system, comprising of an enclosure 101, a stage 102 to provide a stable platform for an artist to perform, a projection unit 103 generates a virtual concert environment including audience simulation, stage 102 visuals, lighting, and background effects, a camera 104 for monitoring the artist during performance, a microphone 105 mounted on the stage 102 via a sliding unit 106 to move the microphone in multiple directions in synchronization with the artist's performance, an headphones 107 to deliver real-time audio feedback including simulated audience reactions, voice cues, and pitch, volume, or timing adjustments, based on the artist's live performance for immediate correction, multiple flash lights 108 mounted via a slider 109 to provide lighting effects in accordance with the artist's movements, performance rhythm, and training mode, and a user-interface to enable authorized personnel to input performance data, monitor the artist, and interact in real-time for training management.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130300 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SAFETY-INTEGRATED ELECTRICITY DISTRIBUTION SYSTEM

(51) International classification	:H02G1/02, G01R31/50, H02H7/26, G01R19/00, B25J19/02, B25J9/00, E04H12/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A safety-integrated electricity distribution system, comprises of a plurality of electricity distribution poles 101, a vertically adjustable housing 102 to house a feeder unit associated with the pole, a sensing unit for detecting parameters relating to the feeder units and with a database for recording of data, a communication unit interconnecting the poles 101 to establish a data transfer network, an analysis module to determine anomalies and source of the anomalies, at least one robotic arm 103 for dynamic load shifting, a load management module to continuously monitor load on each of the feeder unit to cause the robotic arm 103 to dynamically shift load, a deployable canopy 104 to deploy in accordance with thermal condition of the feeder unit to shield surroundings from sparks generated from the feeder unit.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/12/2025
(21) Application No.202521129621 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULBERRY LEAF–COQ10 TRANSDERMAL PATCH FOR MULTI-TARGET DIABETES MODULATION

(51) International classification	:A61K36/60, A61K9/70, A61K47/38, A61K47/34, A61K47/32, A61K47/12, A61K47/22, A61K31/79
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(57) Abstract :
The present invention discloses a novel transdermal patch composition comprising mulberry leaf extract containing 1-deoxynojirimycin and coenzyme Q10 for comprehensive diabetes management through multi-target metabolic modulation. The transdermal patch delivers therapeutic concentrations of bioactive compounds through controlled release mechanisms, achieving simultaneous regulation of blood glucose levels, enhancement of insulin sensitivity, improvement of mitochondrial function, reduction of oxidative stress, and protection against diabetic complications. The formulation demonstrates superior transdermal penetration efficiency compared to conventional oral formulations, bypasses gastrointestinal metabolism, maintains sustained plasma concentrations for extended periods, and eliminates gastrointestinal side effects. The invention encompasses methods for preparing the transdermal patch using polymer matrices, penetration enhancers, and stabilizing agents, along with applications in treating type 2 diabetes mellitus, prediabetes, insulin resistance, metabolic syndrome, and prevention of diabetic complications.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/12/2025
(21) Application No.202521129736 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Cognitive Load Adaptive Interaction in Static or Pre Recorded Content

(51) International classification	:G06F8/34, G06F3/048, G06F16/3329, G06N20/00, G06F40/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)SHARMA, Asv Nagesh Kumar

(57) Abstract :
A system and method for cognitive load adaptive interaction in static or pre recorded content is disclosed. The system receives digital content and extracts multimodal signals including audio, visual, textual, and structural parameters. The system computes cognitive load across a content timeline and generates a cognitive load curve and a load annotation table. The system generates interaction elements based on the load annotation table, including recap elements, simplification elements, micro animation elements, branching elements, breathing elements, knowledge check elements, or repetition elements. The system inserts the interaction elements into the content through rendering, overlay placement, micro scene generation, and time aligned composition. The system evaluates the augmented content through behavioural models or digital twin constructs to determine the effect of inserted elements. The system operates through a multi agent architecture executed through cloud based orchestration and GPU and NPU accelerated processing. The invention enables cognitive load adaptive augmentation of static or pre recorded content.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/12/2025

(21) Application No.202521129751 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MODEL FOR PERISTALTIC TRANSPORT OF BIO-FLUIDS IN ROUGH DIVERGING CHANNEL

(51) International classification	:F04B 43/12, G06F 19/00, G06F 17/50, G06F 17/10, G06F 17/11
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT MODEL FOR PERISTALTIC TRANSPORT OF BIO-FLUIDS IN ROUGH DIVERGING CHANNEL The present disclosure provides a method for peristaltic transport of bio-fluids in a rough diverging channel. The method includes characterizing surface roughness topology using statistical correlation functions, establishing governing momentum equations with surface roughness integration for power law fluids, determining whether roughness amplitude exceeds a critical threshold for laminar flow, applying a modified Reynolds number correction for high-roughness regime when the roughness amplitude exceeds the threshold, configuring sinusoidal wall deformation parameters for peristaltic pumping, calculating velocity profile with roughness correction, computing pressure gradient from integrated momentum balance equations, and processing the bio-fluids in the rough diverging channel geometry. The disclosure also provides a peristaltic biofluid transport system including a rough diverging channel with surface roughness and sinusoidal deformation, a flow control module with velocity calculator and Reynolds corrector, and a biofluid medium.
No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521129984 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SULFO-OCTAHYDROIMIDAZO[1,2-a]AZEPIN-4-IUM CHLORIDE (DBUST-Cl) CATALYST FOR SYNTHESIS OF SCHIFF BASE

(51) International classification	:C07D233/14, C07D235/02, C07D487/04, B01J31/22, C07C251/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SULFO-OCTAHYDROIMIDAZO[1,2-a]AZEPIN-4-IUM CHLORIDE (DBUST-Cl) CATALYST FOR SYNTHESIS OF SCHIFF BASE The present invention relates to sulfo-octahydroimidazo[1,2-a]azepin-4-ium chloride 5 (DBUST-Cl) and its application as an efficient catalyst for the synthesis of Schiff bases. The catalyst promotes the condensation of substituted aromatic aldehydes with amines under mild conditions, delivering high yields with reduced reaction time. DBUST-Cl demonstrates superior catalytic activity, improved selectivity, and operational simplicity, enabling cleaner, faster, and scalable synthesis of heterocyclic compounds.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130016 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A NEXT GENERATION CAR RENTAL SYSTEM

(51) International classification	:G06Q 30/06, G06Q 10/02, G06Q 50/30, G06Q 30/02, G06Q 10/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A NEXT GENERATION CAR RENTAL SYSTEM A Next Generation Car Rental System (NGCRS) (100) is disclosed as a web and mobile-based platform providing an automated and intelligent vehicle rental solution. The system comprises a user interface module (101) for vehicle search, booking, and payment, a backend processing unit (102) operatively coupled thereto, a database (103) for storing user, vehicle, booking, and transaction data, and an optional blockchain-based rental agreement module (104). The backend processing unit (102) enables real-time automated pricing, booking management, fleet monitoring, and secure payment processing. A dynamic pricing engine adjusts rental rates based on demand, availability, seasonal factors, and user behavior. IoT-enabled fleet management using GPS and vehicle sensors provides real-time tracking, geofencing, and predictive maintenance. The system supports electric vehicle rentals with integrated charging station discovery and employs AI-based personalization to recommend vehicles and offers. Real-time analytics, smart inventory updates, and vehicle health monitoring improve operational efficiency, transparency, sustainability, and user experience. FIG. 1

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130046 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Dynamic Commission Computation Using Edge Telemetry, AI Enhancement Metrics, and Reinforcement Learning

(51) International classification	:G06F9/451, G06Q30/02, G06Q30/0283, G06Q30/04, G06N3/092, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides a system and method for computation of dynamic commission values in a digital content marketplace. Trainer content is received and processed through artificial intelligence enhancement pipelines operating on graphics processing units, neural processing units, and cloud compute resources. An artificial intelligence enhancement metric is computed based on the proportion of platform generated or platform modified content. Viewer devices capture interaction telemetry including behavioural signals and device level compute usage, which is processed into an engagement interaction vector. Hardware utilisation units representing platform resource consumption are measured for each viewer session. Reinforcement learning models receive the engagement interaction vector, the artificial intelligence enhancement metric, and the hardware utilisation units and compute a first commission value based on platform resource utilisation and a second commission value based on artificial intelligence generated or artificial intelligence enhanced content contribution. Commission values are updated during the session and finalised for billing.

No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130301 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED AI-ASSISTED FITNESS TRAINING DEVICE

(51) International classification	:A63B 24/00, A63B 71/06, A63B 22/06, A63B 22/02, A63B 21/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(57) Abstract :
An automated AI-assisted fitness training device comprising a body 101 mounted on multiple motorized wheels 102 for autonomous movement over a surface, a user-interface communicatively coupled with a control unit to receive exercise session data, an AI-enabled camera 103 mounted on body 101 to identify gym equipment, detect weight markings, and monitor user posture during exercise, an inertial measurement unit IMU operatively coupled with camera 103 to continuously track body 101 movement and posture, a real-time guidance unit 104 installed on body 101 to project step-by-step exercise instructions and safety alerts onto a nearby surface, a physical support unit installed on body 101 to provide adjustable physical support during strength training exercises, a warm-up board mounted on a front side of body 101 to assist adaptive warm-up and stretching exercises, and a database integrated with control unit to store medical history and fitness data.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130302 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS TERRACE FARMING DEVICE

(51) International classification	:A01B49/00, A01B49/06, A01B69/00, A01B76/00, A01C7/18, A01C5/08, B25J11/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Neel Dholakia

(57) Abstract :
An autonomous terrace farming device, comprising of a body 101 mounted with two caterpillar wheels 102 for providing movement across various terrains, an inspection unit 103 captures and processes real-time data from terrace surfaces, a seed sowing arrangement to deposit seeds at optimal depth and spacing, multiple articulated arms 107 mounted on the body 101, each arm 107 comprising a tool turret 109 equipped with interchangeable end-effectors, including multiple nozzles 110 for injecting stabilizing polymers or slurry into terrace soil or cracks, multiple leveling and mixing tools 111 for smoothing, blending, and conditioning soil layers, multiple aeration tools 112 for performing localized soil aeration and drainage, multiple mechanical tampers 113 for compacting subsoil and stabilizing terrace foundations, and multiple hollow augers 114 for creating drainage pathways and relieving hydrostatic pressure.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130314 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM FOR AUTOMATED CLASSIFICATION, RESTORATION, AND PACKAGING OF HETEROGENEOUS NUTS FOR DISCONTINUED VEHICLE

(51) International classification	:B07C5/02, B07C5/04, B07C5/10, B07C5/34, B07C5/342, B23P6/00, C23F11/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Neel Dholakia

(57) Abstract :
A system for automated classification, restoration, and packaging of heterogeneous nuts for discontinued vehicle, comprising of a housing 101 configured with a hopper 102 to receive heterogeneous nuts, a conveyor belt 103 and an ultrasonic transducer to receive heterogeneous nuts and regulate linear flow into a single-file inspection path, an inspection unit 104 to classify nuts based on dimensional parameters, corrosion level, thread type, and compatibility with discontinued vehicle models, a reshaping and restoration unit reforms deformed nut geometry, reconditions damaged threads, removes surface burrs, and restores dimensional tolerances, a kitting and customization unit sorts, groups, and assembles restored nuts into vehicle-specific kits using identification criteria, a cleaning and protective coating unit to remove contaminants, dispense cleaning fluid, apply a rust-inhibiting coating, and dry the nuts, and a packaging and labelling unit wraps the coated nuts and apply labels, and form packages using a dynamic package former.

No. of Pages : 26 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/12/2025
(21) Application No.202521129752 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE BIOECONOMIC CONTROL SYSTEM BASED ON PREDATOR-PREY MODEL WITH DYNAMIC HARVESTING FEEDBACK MECHANISM

(51) International classification	:G05B 13/04, G05B 13/02, A01D 41/127, A01D 34/00, G05B 11/42
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Mortuja, MD Golum

(57) Abstract :
ABSTRACT ADAPTIVE BIOECONOMIC CONTROL SYSTEM BASED ON PREDATOR-PREY MODEL WITH DYNAMIC HARVESTING FEEDBACK MECHANISM The present disclosure provides an adaptive bioeconomic control system (400) that includes a mathematical model module (402) configured to implement predator-prey equations (404) with harvesting terms of the form ├ dx/dt=x(aⓜ┤ -ⓜbⓜyⓜ-ⓜH_1ⓜ(xⓜ┤ ,ⓜt) ┤) and ├ dy/dt=y(-ⓜ┤ cⓜ+ⓜdⓜxⓜ-ⓜH_2ⓜ(yⓜ┤ ,ⓜt) ┤), where x and y represent prey and predator populations respectively, a, b, c, d are system coefficients (408), and H_1 (xⓜ┤ ,ⓜt) and H_2 (yⓜ┤ ,ⓜt) are adaptive harvesting functions. The system includes a data collection module (426) for obtaining real-time population data, a harvesting control module (410) with adaptive harvesting functions (412) to adjust harvesting rates, a feedback controller (414) to modify harvesting functions based on population changes, and an optimization module (418) to determine control coefficients (416) balancing ecological sustainability with economic objectives. (Fig. 2)

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521129807 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A HETEROARYL-1,3,4-OXADIAZOLE DERIVATIVES AS ANTICANCER AGENTS

(51) International classification	:A61P35/00, C07D271/10, C07D271/113, C07D413/04, C08D319/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Dr. RAJU KADACHHA

(57) Abstract :
ABSTRACT A HETEROARYL-1,3,4-OXADIAZOLE DERIVATIVES AS ANTICANCER AGENTS The present invention is related to a heteroaryl-1,3,4-oxadiazole derivatives as anti-cancer agents. The present invention particularly is also related to a heteroaryl-1,3,4-oxadiazole derivatives as anti-cancer agents and process of preparation thereof. The present invention is particularly related to a heteroaryl-1,3,4-oxadiazole derivatives as anti-cancer agents represented by the Formula (I). Formula (I)
No. of Pages : 27 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521129809 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HPC-Smart Submit: A Web-Based Intelligent SLURM Job Submission and Monitoring System

(51) International classification	:H04L 29/06, G06F 9/46, H04L 12/24, G06F 9/50, G06F 9/48
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention “HPC-SmartSubmit” provides a unified, web-based interface for submitting, managing, and monitoring High-Performance Computing (HPC) workloads in SLURM-based clusters. It solves the long-standing problems users face when interacting with HPC systems through CLI-only environments. The system enables real-time job status tracking, GPU/CPU detection, multi-job cancellation, automatic resource validation, live .out/.err streaming, SSH-secured authentication, cluster node visibility, and a smart script generator with environment support. This invention substantially increases accessibility, efficiency, and accuracy in job submission workflows for researchers and HPC administrators.

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521129826 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ULTRA-HIGH-STRENGTH LIGHTWEIGHT STEEL WITH ENHANCED DUCTILITY AND CRYO-STRENGTH

(51) International classification	:C22C 38/00, C22C 38/08, C22C 38/04, C22C 38/02, C22C 38/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A high-specific-strength steel alloy comprising, in weight percent: iron (Fe) as the base metal, aluminum (Al) in the range of 10-15%, manganese (Mn) in the range of 15-20%, nickel (Ni) in the range of 4-6%, and carbon (C) in the range of 0.7-1.0%, wherein the alloy exhibits a dual-phase microstructure of austenite and ferrite with nano-scale precipitates and process thereof.

No. of Pages : 19 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130055 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN ANTIMICROBIAL COMPOSITION DERIVED FROM KALANCHOE PINNATA AND METHOD OF PREPARATION AND USE THEREOF

(51) International classification	:A61P 31/04, A01N 43/90, A61K 31/352, A61K 36/185, A61K 31/58
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an antimicrobial composition derived from Kalanchoe pinnata and a method of preparation and use thereof. The composition comprises bioactive phytochemicals including flavonoids, alkaloids, bufadienolides, and phenolic compounds exhibiting broad-spectrum antibacterial, antifungal, and antiviral activity. The invention provides a natural, safe, and effective alternative to synthetic antimicrobial agents.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130093 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Surveillance System to Detect Explosives across the Globe Using Sensors, AI and Satellites

(51) International classification	:G06N 3/08, G08B 13/196, G01S 19/01, G06N 3/04, G01S 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT [505] The advanced global explosive detection surveillance system introduces an innovative multi-sensor security framework for comprehensive threat identification that integrates satellite monitoring protocols with adaptive detection mechanisms, facilitating real-time explosive identification, dynamic threat assessment optimization, and robust security confirmation while maintaining seamless global integration and operational accuracy for consistent explosive detection applications. [510] The comprehensive security framework employs adaptive artificial intelligence algorithms and intuitive sensor protocols, utilizing embedded computational processing arrays and energy-efficient detection systems to ensure timely threat identification, enhanced security understanding, and optimal surveillance reliability while maintaining continuous monitoring capabilities. [515] The integrated methodology combines multi-dimensional detection techniques with artificial intelligence-driven pattern recognition systems, leveraging variable-precision sensor signals and multi-factor threat indicators to optimize detection procedures and analysis workflows for maximum security accuracy and minimal false positive rates during critical surveillance applications. [520] The novel responsive surveillance architecture features engineered high-precision sensor components with specialized explosive fingerprinting protocols, enabling complex multi-stage threat verification while ensuring detection consistency and performance optimization across various global environments without compromising system reliability. [525] The innovative design incorporates strategic validation mechanisms for enhanced explosive identification and security enhancement, utilizing optimized multi-sensor systems and adaptive detection technology to ensure legitimate threat assessment while maintaining functionality across diverse global environments and surveillance scenarios. [530] Implementation methodology emphasizes scalable global integration and efficient detection sequences, implementing interactive monitoring measures and pattern recognition algorithms to achieve superior threat determination, enhanced explosive identification, and unauthorized substance prevention while ensuring technological simplicity during global monitoring. [535] The system demonstrates exceptional adaptability through comprehensive integration of explosive identification protocols and intelligent sensor technologies, validating its effectiveness across various multifunctional surveillance configurations and global scenarios while maintaining consistent detection performance and operational efficiency under diverse conditions. [540] The developed framework enables sustainable and reliable detection of explosive threats through streamlined, AI-powered surveillance systems, providing significant advantages over traditional security approaches through variable validation mechanisms, adaptive identification protocols, and improved threat assessment while maintaining superior detection accuracy during critical global security procedures

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130315 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE HAND ASSIST DEVICE FOR INDUSTRIAL WORK

(51) International classification	:B25J 9/00, A61H 3/00, G06K 7/10, B25J 13/08, B25J 9/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Akshay Ranpariya
7)Neel Dholakia

(57) Abstract :
A wearable hand assist device for industrial work comprises a wearable hand exoskeleton frame 101 comprising forearm section 102 and multiple finger-like projections 103 to accommodate user's forearm and fingers, a dual-band textile antenna module 104 transmits equipment location, a camera 106 scans recognize labels, symbols, or QR codes to guide the user toward target equipment via a speaker 107, a holographic projection module 108 projects assists user for tool navigation, an palm-guard plate 109 shields the user's hand from sharp, heated, or unstable metal surfaces, a health-monitoring module 111 monitors multi-parameter biosignals and extract stress-related features, a linear actuator 113 with a block 114 provides tactile feedback to user in gripping a wrong tool, a tilt sensor detects unsafe posture of forearm and vibrating unit provides haptic feedback, a IMU 112 monitors the hand's orientation and motion trajectory, a hinge joint 115 restricts user's wrist and hand movement.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130316 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : OIL AND GAS SITE SURVEYING DEVICE

(51) International classification	:G01N 1/08, E02F 3/96, E21B 49/02, E21B 7/02, E21B 49/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Neel Dholakia

(57) Abstract :
An oil and gas site surveying device, comprising a bot 101 to accommodate multiple components , multiple wheels 104 comprising spikes 106 for enhanced traction, a survey module 107 to perform preliminary scanning and assessment of the exploration site, a hydraulic arm 109, equipped with a toothed-edge bucket 110 for performing controlled soil excavation, a hydraulic plunger 111 with a wedge-shaped plate 112 to get penetrated for loosening the soil, a drilling unit 114 drill into the subsurface to a predetermined depth, an articulated gripper 116 operate a vacuum pump 117 for extracting hydrocarbon or soil samples and transferring into a storage container, multiple L-shaped extendable poles 119 with a plate 120, extend and position the plates 120 for refilling excavated soil.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130317 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FIRE EXTINGUISHING ASSISTIVE DEVICE

(51) International classification	:A62C13/00, A62C31/02, A62C99/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Krushita Mundiya
4)Dr. Ravikumar R N

(57) Abstract :
A fire extinguishing assistive device comprise of a vertical platform 101 configured with a C-shaped rod 201 via a hinge, accessed by a user to manipulate the platform 101, an inspection unit to detect fire intensity, hotspots, gas type, airflow direction, smoke level, potential hazards and condition of the user, a protective covering unit to expand to shield the user from heat and flames, an audio alert module 104 installed on the platform 101 to generate alerts, a holographic projection unit 105 to project a safe navigation path in green colour and hazardous areas in red colour within the firefighter's field of view, a cylinder-holding unit to hold one or more fire-extinguisher cylinders, a gas-spraying unit to dispense fire-extinguishing gas in a controlled, directional, and pressure-regulated manner toward a target region, a fitting unit to establish a secure coupling between the cylinder and the gas-spraying unit.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130318 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WIRE-PROCESSING AND MICRO-COIL WINDING DEVICE

(51) International classification	:B65H54/22, B21F3/00, B65H71/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Akshay Ranpariya
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(57) Abstract :
A wire-processing and micro-coil winding device, comprises of a housing 101 containing a spool 102 for controlled metal wire 103 supply, a wire-intake unit to pull wire 103 along a defined path, a geometry monitoring unit to continuously detect wire 103 placement, spiraling angle, wire diameter, and surface defects in real time, a wire-conditioning unit to correct wire roundness, thickness irregularities, and surface contamination, a lubrication unit to dispense lubricant based on feedback from integrated sensing suite, a drying and surface-balancing unit to maintain wire temperature and surface moisture, a pair of soft feed rollers 114 operatively coupled to at least one load cell to detect real-time wire tension and regulate roller operation, a guiding unit to adjust wire alignment and thin wire, a motorized spindle 116 to rotate a coil core and form micro-coils, and a database integrated with a control unit to store and generate optimized coil parameters.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130094 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Preparation method of Encapsulated Nano Ionic DAP (diammonium phosphate) by Digested Protein Sugar

(51) International classification	:C07C3/00, C05B1/06, C05B7/00, C05B11/00, C05B13/00, C05G5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT [505] The present invention introduces an innovative method for preparing encapsulated nano ionic ammonium phosphate (DAP) fertilizer using digested protein sugar. The process involves creating an ionic DAP solution, mixing it with a plant-based or animal-based protein sugar solution, and encapsulating the ionic DAP using an acidic reagent under controlled temperature conditions [510] This encapsulation methodology enables the production of nano-scale DAP particles in the size range of 10-200 nm, with the particle size controllable by adjusting the temperature and concentration of the protein sugar solution. Optional additives such as stabilizers, dispersants, and antimicrobial agents can be incorporated to enhance the properties and stability of the final nano DAP product. [515] The resulting encapsulated nano ionic DAP fertilizer exhibits superior properties compared to conventional DAP fertilizers, with potential applications in catalysis, detergents, cleaners, and agriculture. The nano-scale size and encapsulation by digested protein sugar allows for improved nutrient delivery, controlled release, and enhanced uptake efficiency when applied in agricultural settings. [520] Characterization of the encapsulated nano ionic DAP particles using transmission electron microscopy (TEM), dynamic light scattering (DLS), and zeta potential measurements confirms the successful formation of nano-scale DAP encapsulated by the digested protein sugar matrix, with high stability and uniformity.

No. of Pages : 8 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130095 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Based Predictive Maintenance and Quality Monitoring System for Building Construction and Project Management

(51) International classification	:G06N 20/00, G06Q 10/00, G06Q 10/06, G06Q 50/08, G06N 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT [505] The advanced AI-based predictive maintenance and quality monitoring system introduces an innovative multi-sensor framework for comprehensive building construction management that integrates machine learning validation protocols with adaptive structural determination mechanisms, facilitating real-time infrastructure calculations, dynamic maintenance optimization, and robust quality confirmation while maintaining seamless project integration and operational accuracy for consistent construction applications. [510] The comprehensive construction framework employs adaptive artificial intelligence algorithms and intuitive monitoring protocols, utilizing embedded IoT processing arrays and energy-efficient sensor systems to ensure timely structural identification, enhanced building understanding, and optimal maintenance reliability while maintaining continuous performance monitoring capabilities. [515] The integrated methodology combines multi-dimensional construction techniques with computer vision-driven pattern recognition systems, leveraging variable-precision sensor signals and multi-factor structural indicators to optimize maintenance procedures and quality workflows for maximum construction accuracy and minimal deterioration uncertainty during critical project applications. [520] The novel responsive infrastructure architecture features engineered high-precision monitoring components with specialized building fingerprinting protocols, enabling complex multi-stage structural verification while ensuring maintenance consistency and performance optimization across various construction instruments without compromising system reliability. [525] The innovative design incorporates strategic validation mechanisms for enhanced structural identification and quality security, utilizing optimized multi-function systems and adaptive monitoring technology to ensure legitimate maintenance assignment while maintaining functionality across diverse construction environments and project scenarios. [530] Implementation methodology emphasizes scalable infrastructure integration and efficient maintenance sequences, implementing interactive monitoring measures and pattern recognition algorithms to achieve superior structural determination, enhanced quality identification, and unauthorized deterioration prevention while ensuring technological simplicity during project monitoring. [535] The system demonstrates exceptional adaptability through comprehensive integration of structural identification protocols and intelligent monitoring technologies, validating its effectiveness across various multifunctional construction configurations and project scenarios while maintaining consistent performance monitoring and operational efficiency under diverse conditions. [540] The developed framework enables sustainable and reliable maintenance of construction projects through streamlined, AI-powered monitoring systems, providing significant advantages over traditional construction approaches through variable validation mechanisms, adaptive identification protocols, and improved structural assignment while maintaining superior monitoring accuracy during critical project maintenance procedures

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130319 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EMERGENCY-LANE MANAGEMENT AND TRAFFIC-CLEARANCE SYSTEM FOR EMERGENCY VEHICLES

(51) International classification	:E01F 13/04, G08G 1/0965, G08G 1/16, E01F 13/00, E01F 9/619
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An emergency-lane management and traffic-clearance system for emergency vehicles, comprising of an emergency lane 101 integrated with a multi-lane roadway 102 and includes multiple hydraulic posts 103, and multiple guided rails 104 supports the posts 103, the posts 103 retract and slide to selectively open or close the lane 101, multiple inspection units 105 determines an approaching emergency vehicle's width, speed, type and trajectory, a projection unit 107 displays 3D visual cues to guide traffic and direct the emergency vehicle toward the dedicated lane 101, multiple safety units restricts unauthorized lane 101 entry, deploy physical barriers, and provide obstruction prevention for non-emergency vehicles, a mesh-covering assembly 112 deploy a mesh sheet across the inter-post region to prevent entry, multiple spike units 115 tilt and deploy to disable the vehicle safely, an acoustic sensor and speaker 116 detect emergency sirens, sounds near the dedicated lane 101 and broadcast warnings.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130322 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SPORTS RECOMMENDATION SYSTEM FOR STUDENTS

(51) International classification	:G16H 20/30, G06Q 50/20, G09B 19/00, A41D 1/00, A61B 5/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Akshay Ranpariya
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(57) Abstract :
A sports recommendation system for students comprising, a wearable jacket 100 configured to be worn by a student while performing sport activity, a plurality of sensors for monitoring chest expansion, body temperature, heart rate, hand and limb motion, body posture and movement, a kiosk 101 for enabling user to interact, a display unit 102 to provide visual feedback, and display personalized recommendations regarding suitable sports activities, a microphone 104 capture user responses, a certificate analysis to read and analyze user certificates for previous sports achievements, a holographic projection unit 109 to provide step-by-step visual guidance and instructional feedback to the student regarding the correct execution of sports techniques, movements, posture, and strategies based on their selected sport, a microcontroller to receive sensor data, process the data using artificial intelligence and machine learning protocols and provide personalized sports recommendations to the user via display and a speaker 112.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130323 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BRICK QUALITY COMPLIANCE SYSTEM

(51) International classification	:G01N 33/38, G05D 1/02, G01N 25/72, G01J 5/00, B25J 19/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A brick quality compliance system, comprising a cuboidal-shaped platform 101 configured as a bot, mounted on motorized wheel assemblies 102 for mobility, a plurality of hydraulic dampers 103 with spring-loaded linkages for maneuverability on uneven terrain, a navigation module for guided movement at brick manufacturing sites, a monitoring arrangement, comprising an AI-enabled thermal camera 104 and a first plurality of sensors mounted on inverted U-shaped frame 105 for inspecting safety aspects, a plurality of emission detecting sensors mounted on a telescopic arm 106 to detect toxic combustion by-products, a fire-resistant motorized articulated arm 107 for entering into combustion chamber, an extendable link 108 with a third plurality of sensors for soil inspection, a GPR sensor and a depth sensor for detecting excavation conditions, a touch-enabled screen 109 for visuals, a speaker 110 and a microphone 111 to enable audio interactions.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025

(21) Application No.202521130808 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MULTI LAYERED PAPER BASED PRESSURE SENSOR

(51) International classification	:G01L1/20, A61B5/0215
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Amartyaraj Kumar
4)Sourin Das

(57) Abstract :
The present invention relates to a flexible and cost effective multi layered paper based pressure sensor (112). The pressure sensor (112) comprises a lowermost layer(110a), an upper most layer (110b) and plurality of middle layers (110c). The layers of tissue papers (105) in the paper based pressure sensor are configured with composite solution (103) of graphite (102) and Poly (3,4-ethylenedioxythiophene): Polystyrene sulfonate (101). Further, two conductive wires (109) configured to connect in the middle portion of the uppermost layer (110b) and the lowermost layer (110a) through a silver paste (108) for measurement of electrical parameters by deformation of the contact area of the uppermost layer (110b) and the lowermost layer (110a). The multi layered paper based pressure sensor (112) operates on the piezoresistive principle for real time detection such as wrist and temporal artery pulse, knee and elbow bending and vocalization response as word syllable marking.

No. of Pages : 42 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025
(21) Application No.202521130836 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART HANDHELD DEVICE FOR PLANT DISEASE DIAGNOSTICS

(51) International classification	:G06T 7/00, A01G 7/00, G06N 3/08, G06V 10/764, G01N 33/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)SAMAJDAR, Dip Prakash
8)KUMAR, Anil

(57) Abstract :
SMART HANDHELD DEVICE FOR PLANT DISEASE DIAGNOSTICS A smart handheld device (100) for plant disease diagnostics comprises a plurality of sensors (101), an image capturing device (102), a processing unit (103), an Artificial Intelligence module (104), a disease database tool (105), a remedy guide tool (106), and a screen (107). The processing unit (103) acts as the controller, wherein the sensors (101) are connected to GPIO pins and the image capturing device (102) is coupled to a dedicated camera interface. The user interacts with the screen (107) to initiate a diagnostic scan, whereupon the processing unit (103) activates the image capturing device (102) and acquires environmental data from the sensors (101). The AI module (104) classifies the disease, and the processing unit (103) queries the disease database tool (105) and remedy guide tool (106) to display integrated results including actionable remedies on the screen (107). The device may operate completely offline, making it suitable for remote regions. (Figure 1)

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025
(21) Application No.202521130884 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A TRANSFERSOMAL IN-SITU NASAL GEL SYSTEM OF QUETIAPINE FUMARATE FOR NOSE-TO-BRAIN DELIVERY AND METHOD OF PREPARATION THEREOF

(51) International classification	:A61K31/554, A61P25/18, A61K9/127, A61K9/06, A61K31/685, A61K47/24, B82Y5/00, B82Y30/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Rucha Pardeshi

(57) Abstract :
Abstract The present invention relates to a transferosomal in-situ nasal gel system of quetiapine fumarate for nose-to-brain delivery. The invention provides a nano-vesicular transferosomal formulation comprising quetiapine fumarate, phospholipids, a surfactant, and cholesterol, prepared by a thin-film hydration method and incorporated into an ion-sensitive gellan gum-based in-situ gel. Upon intranasal administration, the formulation undergoes sol-to-gel transition, exhibits mucoadhesion, and enables sustained drug release. The ultra-deformable transferosomes facilitate direct transport of quetiapine fumarate to the brain via olfactory and trigeminal pathways, bypassing first-pass metabolism and improving bioavailability. The invention offers an effective, safe, and patient-compliant alternative for the treatment of schizophrenia.

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130096 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Facial Expression Recognition on Video using Deep Learning

(51) International classification	:G06V 40/16, G06K 9/00, G06V 10/764, G06K 9/62, G06V 10/774
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT [515] The integrated methodology combines multi-dimensional facial feature techniques with artificial intelligence-driven expression recognition systems, leveraging variable-precision video signals and multi-factor emotional indicators to optimize detection procedures and classification workflows for maximum facial accuracy and minimal recognition uncertainty during critical video analysis applications. [520] The novel responsive facial architecture features engineered high-precision feature extraction components with specialized expression fingerprinting protocols, enabling complex multi-stage emotion verification while ensuring recognition consistency and performance optimization across various video formats without compromising system reliability. [525] The innovative design incorporates strategic validation mechanisms for enhanced emotion identification and facial security, utilizing optimized multi-function systems and adaptive recognition technology to ensure legitimate expression assignment while maintaining functionality across diverse video environments and emotion scenarios. [530] Implementation methodology emphasizes scalable facial integration and efficient recognition sequences, implementing interactive detection measures and pattern recognition algorithms to achieve superior emotion determination, enhanced facial identification, and unauthorized expression prevention while ensuring technological simplicity during video monitoring. [535] The system demonstrates exceptional adaptability through comprehensive integration of facial identification protocols and intelligent recognition technologies, validating its effectiveness across various multifunctional expression configurations and video scenarios while maintaining consistent recognition performance and operational efficiency under diverse conditions. [540] The developed framework enables sustainable and reliable detection of facial expressions through streamlined, AI-powered recognition systems, providing significant advantages over traditional emotion detection approaches through variable validation mechanisms, adaptive identification protocols, and improved expression assignment while maintaining superior recognition accuracy during critical video analysis procedures.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130180 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Novel Machine Learning Approach for Heart Disease Prediction

(51) International classification	:G16H50/30, G06N3/08, A61B5/318
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A Novel Machine Learning Approach for Heart Disease Prediction The present invention relates to a novel machine learning–based system and method for early prediction of heart disease using clinical and electrocardiogram (ECG) data. The invention addresses the limitations of conventional diagnostic approaches by providing an automated and intelligent decision-support framework capable of identifying potential cardiac conditions at an early stage. By leveraging advanced machine learning techniques, the system assists healthcare professionals in improving diagnostic accuracy and enabling timely medical intervention. The proposed system incorporates a comprehensive data preprocessing mechanism that includes data cleaning, feature standardization, and statistical normalization to ensure consistency and reliability of input data. A regularized deep neural network architecture with multiple hidden layers is employed as the core classification engine, allowing the system to capture complex non-linear relationships among clinical and ECG-related attributes. The training process is optimized using adaptive learning algorithms and early stopping mechanisms to enhance model generalization and prevent overfitting. The invention provides an evaluation and output module that generates accurate prediction results along with standard performance metrics for clinical interpretation. The system is scalable and can be deployed as a standalone or cloud-based platform, making it suitable for hospitals, diagnostic centers, and telemedicine applications. Overall, the invention offers a robust, efficient, and reliable solution for early heart disease prediction and improved patient care outcomes.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/12/2025

(21) Application No.202521128747 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A System And A Method For Automated Discovery Of Educational Events

(51) International classification	:G06Q 50/20, G06F 17/30, H04W 4/021, G09B 7/00, H04W 4/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Dr. Ati Jain
6)Dr. Ritu Tandon

(57) Abstract :
A System And A Method For Automated Discovery Of Educational Events The present invention relates to an automated system and method for discovery of educational events based on real-time geographic location and temporal relevance. The invention enables continuous receipt of authorized location data from a user device (100) and correlates such data with geotagged educational event information stored in an event datastore (120). A notification control engine (110) computes proximity between the user and event venues, dynamically determines a notification radius using predefined data-driven rules, and evaluates event timing relevance within predefined time windows. When both spatial and temporal conditions are satisfied, the system automatically generates and transmits a location-triggered event notification to the user device (100) without requiring manual event search. The invention improves real-time awareness of campus-centric educational events such as hackathons and technical workshops through deterministic, location-aware processing. Figure 1 is the representative figure.

No. of Pages : 34 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131080 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENGINEERED MULTI-LAYERED HOLE TRANSPORT LAYER FOR HIGH-EFFICIENCY AND STABLE PEROVSKITE SOLAR CELLS IN n-i-p CONFIGURATION

(51) International classification	:H10K85/50, H10K30/50, H10K30/40, H10K30/15, H10K30/82
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a perovskite solar cell featuring a novel multi-layered hole transport layer (HTL) for enhanced efficiency and stability. The HTL comprises a thin Spiro-OMeTAD layer, a thermally evaporated metal oxide layer (such as MoO_3), and an RF sputtered metal oxide overlayer (such as RuO_x), sequentially deposited to optimize interfacial contact and energy-level alignment. This architecture synergistically improves charge extraction, suppresses ion migration, and provides robust protection against environmental degradation. Devices fabricated with this HTL achieve power conversion efficiencies up to 23.7% and operational stability exceeding 1000 hours. The invention is applicable to both rigid and flexible substrates, enabling scalable fabrication of large-area modules and flexible devices with high performance. This multi-layered HTL design addresses the limitations of conventional single or bilayer HTLs, offering a reproducible and versatile solution for next-generation perovskite photovoltaic applications. FIGURE 3

No. of Pages : 39 No. of Claims : 51

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131153 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Modular Stethoscope with Interchangeable Chest Piece

(51) International classification	:A61B 7/02, A61B 7/04, A61B 7/00, A61B 50/30, A61B 5/024
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A modular stethoscope with interchangeable chest piece (1) is described herein. The modular stethoscope (1) comprising a stethoscope body (10), a set of interchangeable chest pieces (20) for neonatal, pediatric, general, and specialist use, silicon based ear tips (30) for acoustic sealing and comfort, and a disposable single use diaphragm cover (40) that prevents cross contamination. The chest pieces (20) are attached to the body (10) via a quick release locking mechanism (50) featuring spring loaded locking balls, a sliding release collar (502), and a seal ring (503) for airtight acoustic continuity, enabling one hand, tool free interchange. Each chest piece (20) has a base body (201) with a female Q-Turn connection (2011), a securing screw (2012), tactile response balls (2013), and an attachment (202) with a male Q-Turn connection (2021) and tactile ball receivers (2022), engagable via the Q-Turn connection.

No. of Pages : 30 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130324 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DRUG DISPENSING AND HEALTH MONITORING SYSTEM

(51) International classification	:A61J 7/04, G16H 20/13, A61J 7/00, G16H 40/67, A61J 1/03
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A drug dispensing and health monitoring system comprising a portable rectangular housing 101 that is impact resistant and ergonomically designed for medical use, a touchscreen control panel 102 providing real time communication and dispensing alerts, and a medical prescription scanning arrangement ..., a first database stores user identification for personalized interaction while a second database records medication dispensing to prevent misuse, a pair of 360-degree rotating AI cameras 108, 109 for safety monitoring, multiple medicine compartments 110 for controlled dispensing and temperature regulation, a clamping unit 112 on a precision guided slider 113 works with a motorized cutter 114, a sanitation arrangement includes a sealed chamber 115, conduit, automated nozzle 116, and UV-LED ring 117, a patient hand positioning arrangement with a concave platform 118 and motorised roller-strap assembly 119 enables physiological monitoring, a holographic projector 120, speaker 121, microphone array 122 and a processing module to control operation.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130325 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FOOD PRODUCT INSPECTION AND VERIFICATION DEVICE

(51) International classification	:G01N 21/90, G01N 33/02, G01N 35/00, G01N 35/10, G01N 35/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A food product inspection and verification device, comprises of a body 101 via extendable stands 102, a platform 103 via a Scott–Russell arrangement 104 to extend the platform 103 outward, a grasping unit to securely hold packaged products during inspection, a bottle opening unit 107 via a dual-axis slider 108 to hold the bottle and remove a bottle cap from the bottle, a seal removal unit 109 to weaken or remove plastic, metallic, or shrink seals prior to cap removal, a liquid inspection unit 110 via a mechanical arm 111 to detect chemical composition, physical properties, quality, and authenticity of liquid food products, a solid and semi-solid inspection unit to analyze texture, composition, freshness, adulteration, and contamination in solid and semi-solid food products, a barcode and label verification unit 114 via an articulated link 115 to retrieve product information.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130326 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CLASSROOM ASSISTANCE AND MANAGEMENT DEVICE

(51) International classification	:G05D 1/02, G06Q 50/20, G05B 19/418, G05D 1/00, G09B 5/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Neel Dholakia

(57) Abstract :
A classroom assistance and management device, comprises of a mobile body 101 to move within a classroom environment via a plurality of motorized omnidirectional wheels 102, a touchscreen interactive display 104 operatively coupled with a control unit for authorized classroom data management, a navigation and environment sensing unit for safe autonomous movement, a monitoring unit installed on a mechanical link 106 for controlled directional surveillance, a data analysis module for real-time processing of sensor data to generate alerts and reports, a storage unit 107 for educational items, an authentication module for controlled access, a question paper review unit for automated examination evaluation, a performance evaluation module for compiling academic and behavioral data, and a placement and seating optimization unit for dynamically recommending seating and learning group arrangements.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130327 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TOURIST GUIDING DEVICE

(51) International classification	:G09F 27/00, G09B 29/00, G09B 29/10, G01S 5/02, H04M 1/72457
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Simrin Fathima Syed
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5)Vipul Ladva
6)Akshay Ranpariya
7)Neel Dholakia

(57) Abstract :
A tourist guiding device, comprising of a mobile housing 101, a sensing unit 104 captures visual, dimensional and thermal data of a vicinity of the housing 101, a transparent sensor casing 105 to house the sensing unit 104 in a rotatable manner, a GPS unit detect an instant location of the housing 101, a microphone 106 captures voice of the tourist to feed into a language detector, for determining the language spoken by the tourist, multiple audio transducers 107 provide audible information to the tourist in the detected language, multiple chambers 108 stored with fragrant materials and dispensed via nozzles 109 for enhanced immersion of the tourist, a projection unit 110 projects information relating to the itinerary and the instant location of the housing 101, and a protective shield 111 to shield 111 the tourist against photography attempts detected via the sensing unit 104.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/12/2025

(21) Application No.202521129162 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : COMPACT LASER PARTICLE ACCELERATOR POWER MODULE USING PLASMASTATE URANIUM FOR ELECTRIFICATION OF AIRCRAFT AND MOBILE VEHICLES

(51) International classification	:H05H1/24, H05H1/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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11)SHRAWANI SAPKAL

(57) Abstract :
A compact laser particle accelerator power module for generating high-energy-density electrical power from plasma-state uranium or thorium, suitable for aircraft, flying machines, road vehicles and compact industrial systems. The module integrates a laser particle accelerator (approx. 15 cm radius, 8 × 250 J configuration producing 13.3 MeV neutrons) with a surrounding high-vacuum storage ring for confining high-energy particle beams and thermal energy; a hand-regulated plasma weight device enabling pilot metering of nuclear fuel in milligram/gram quantities via a probe; a rechargeable fuel cell (cathode-anode-electrolyte) for energy storage; and an integrated electrical distribution system for conditioned power delivery to onboard loads. Plasma fuel interacts with laser beam in the accelerator to generate electromagnetic fields and energetic particles, converted to electricity stored in the fuel cell and supplied via the distribution system, with the storage ring ensuring safe containment and controlled energy release. The invention provides a self-contained, pilot-controllable, affordable power source overcoming size, weight and energy-density limitations of conventional batteries/fuel cells for mobile electrification.

No. of Pages : 21 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/12/2025

(21) Application No.202521129323 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR DEVELOPING A BATTERY PACK MODEL

(51) International classification	:G01R31/36, G01R31/367, G01R31/382, G01R31/392, G06F30/20, H01M10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Rhugved Rane
3)Abhishek Mandhana

(57) Abstract :
SYSTEM AND METHOD FOR DEVELOPING A BATTERY PACK MODEL The present disclosure provides a system and a method for developing a battery pack model. The method400 includes an identification module102, a characterization module104, a modeling module106, a scaling module108, and an estimation module112. The identification module102 analyzes a plurality of diagnostic data of a plurality of cells to identify at least one representative cell. The characterization module104 performs at least one characterization test on the at least one identified representative cell to obtain a plurality of parameters. The modeling module106 processes the obtained plurality of parameters to create a cell model202. Further, the scaling module108 generates a battery pack equivalent circuit model 204 by scaling the cell model 202, and the estimation module112 employs the battery pack equivalent circuit model 204 in a model-based estimation process to determine one or more operational parameters of a battery pack. FIG.4

No. of Pages : 47 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131772 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PORTABLE DEVICE FOR RESTORATION OF DEGRADED HISTORICAL DOCUMENTS

(51) International classification	:H04N 1/00, B05B 17/06, G06K 9/00, G03G 15/00, H04N 1/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Ashutosh Sudhakar Kale
5)Kunal Ramesh Ahire
6)Mahesh Vijayrao Korade

(57) Abstract :
ABSTRACT A PORTABLE DEVICE FOR RESTORATION OF DEGRADED HISTORICAL DOCUMENTS The present invention relates to a portable device (100) and a process (200) for restoration of degraded historical documents. The device (100) comprises a protective outer housing (101) defining a sealed restoration chamber (102), a document support and stabilization assembly (110), an environmental conditioning module (120), a non-contact surface restoration assembly (130), a multimodal imaging and sensing module (140), and a central control and processing unit (150). The environmental conditioning module (120) regulates humidity, temperature, airflow, and gas composition, while the non-contact surface restoration assembly (130) performs ultrasonic micro-vibration, micro-mist dispersion, electrostatic neutralization, and low-pressure vacuum extraction without physical contact. The process (200) enables controlled, localized, and non-invasive restoration without chemical immersion or mechanical abrasion. The invention is portable, battery-operated, and suitable for on-site use in archives, libraries, museums, and field locations. Figure 1.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131637 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PHARMACEUTICAL COMPOSITION AND RELATED METHODS

(51) International classification	:A61K 36/258, A61K 9/00, A61K 36/00, A61K 36/16, A61K 36/48
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)DOKANIA, Shashank
3)SHEKHAR, Himanshu

(57) Abstract :
ABSTRACT “A PHARMACEUTICAL COMPOSITION AND RELATED METHODS” The present invention relates to a paediatric brain and focus syrup comprising herbal and homeopathic actives, including bacopa monnieri Q, ginseng Q, avena sativa Q, ginkgo biloba Q, coffea cruda, and calcarea phosphorica, in combination with pharmaceutically acceptable excipients. The composition is formulated with controlled concentration ranges of each active ingredient and utilizes solvents such as purified water, sorbitol solution, glycerin, and preservatives to ensure stability and uniformity. A gentle Smooth-Blend Integration Step (SBIS) is employed during manufacturing to achieve homogenous dispersion of sensitive actives without high-shear mixing. The syrup is packaged in amber bottles to maintain stability. The invention provides a non-stimulant, non-addictive, sugar-free formulation suitable for improving attention span, mental clarity, academic focus, and behavioral calmness in children.

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131676 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : APPARATUS AND METHOD FOR RETRIEVAL, PRESERVATION, AND DELIVERY OF HUMAN VITREOUS FOR INTRAOCULAR IMPLANTATION

(51) International classification	:A61F 9/007, A61F 2/16, A61F 9/00, A61M 1/00, A61B 17/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT APPARATUS AND METHOD FOR RETRIEVAL, PRESERVATION, AND DELIVERY OF HUMAN VITREOUS FOR INTRAOCULAR IMPLANTATION A retrieval apparatus for harvesting undiluted vitreous gel from donor eyes is disclosed. The apparatus comprises a wide-bore aspiration cannula having gauge between 20G and 23G, a vacuum source adjustable between -60 mmHg and -120 mmHg coupled through silicone tubing, a vacuum pressure regulator for precise pressure control, and a sterile air-infusion line with 0.2 µm filter providing counter-pressure between 10 mmHg and 20 mmHg. The apparatus further includes a pre-chilled collection chamber with double-jacket structure maintaining temperature between 2°C and 8°C, and an inline mesh filter having pore size between 100 µm and 200 µm positioned between the cannula and collection chamber. The vacuum source draws vitreous gel through the aspiration cannula while sterile air infusion maintains globe shape and prevents retinal incarceration. The inline mesh filter captures tissue debris while allowing vitreous macromolecules to pass to the temperature-controlled collection chamber. [To be published with Figure 1]

No. of Pages : 41 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025

(21) Application No.202521131677 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : THERAPEUTIC FOOTWEAR APPARATUS WITH INTEGRATED MAGNETIC REFLEXOLOGY, ANTIMICROBIAL BIO-LAYER, AND GAIT-ACTUATED VENTILATION SYSTEM

(51) International classification	:A43B 7/08, A61H 39/04, A43B 7/06, A43B 7/00, A61N 2/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT THERAPEUTIC FOOTWEAR APPARATUS WITH INTEGRATED MAGNETIC REFLEXOLOGY, ANTIMICROBIAL BIO-LAYER, AND GAIT-ACTUATED VENTILATION SYSTEM A therapeutic footwear apparatus for diabetic foot care and long-distance walking is disclosed. The apparatus comprises a footbed structure having a contoured plantar-contact surface, a magnetic reflexology layer integrated within the footbed structure with magnetic elements and acupressure projections positioned at plantar reflex zones, and an antimicrobial bio-layer disposed on the plantar-contact surface comprising Neem and Tulsi herbal extracts embedded within footbed material. The apparatus further includes a sole assembly coupled to the footbed structure, a gait-actuated ventilation system comprising air chambers and ventilation channels that compress during foot placement to circulate air through ports, and an upper assembly secured to the sole assembly. The magnetic reflexology layer provides simultaneous magnetic and mechanical stimulation to reflexology zones during weight-bearing. The antimicrobial bio-layer continuously releases herbal compounds preventing fungal and bacterial infections throughout extended wear periods. [To be published with Figure 1]

No. of Pages : 42 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025

(21) Application No.202521130519 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SUBSTITUTED 1,2,4-TRIAZOL COMPOUNDS FOR THE TREATMENT OF RHEUMATOID ARTHRITIS

(51) International classification	:A61P 19/02, C07D 249/08, C07D 401/12, A61K 31/4196, C07D 249/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SUBSTITUTED 1,2,4-TRIAZOL COMPOUNDS FOR THE TREATMENT OF RHEUMATOID ARTHRITIS 5 10
The present invention relates to novel substituted 1,2,4-triazole compounds of Formula (I) and pharmaceutically acceptable salts thereof. The invention further provides the processes for the preparation of the substituted N-(4 sulfamoylphenyl)-2-(4-phenyl) 1,2,4-triazole-2-ylamino) acetamide compounds. The invention concerns the therapeutic application of these compounds in the treatment and management of rheumatoid arthritis.

No. of Pages : 27 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202521130536 A
(19) INDIA
(22) Date of filing of Application :23/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOAP CASE WITH ADJUSTABLE STRAP AND DRAINAGE MESH

(51) International classification	:A47K5/02, A47K5/04, A47K5/05, A47K5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A soap case (100) comprises a mesh (4) configured to support a soap bar and permit drainage of water away from the soap bar, and a strap (1) configured to extend over the soap bar to secure the soap bar against the mesh (4), wherein the strap (1) is adjustable to accommodate soap bars of varying sizes.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025
(21) Application No.202521130543 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HIGH-PERFORMANCE MINERAL-FILLED MASTERBATCH IN MULTILAYER POLYMER FILMS

(51) International classification	:C08J 3/22, C08K 3/26, C08K 9/04, C08L 23/06, C08L 23/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT HIGH-PERFORMANCE MINERAL-FILLED MASTERBATCH IN MULTILAYER POLYMER FILMS The present disclosure relates to a masterbatch composition comprising 71-85 wt% surface- 5 treated calcium carbonate with particle size distribution D50 of 0.5-3 μm and D98 of 3-9 μm, 15-29 wt% polyolefin carrier resin, and 0.1-5 wt% functional additives. The surface-treated calcium carbonate exhibits moisture pick-up susceptibility of 1-3 mg/g and specific surface area of 3.5-4.5 m²/g. A process for preparing the masterbatch involves twin-screw extrusion followed by single-screw extrusion, with degassing at 650-720 mm Hg and filtration through 10 40/250/60 mesh. When incorporated at 10-25 wt% in multilayer films, the masterbatch enhances dart impact strength by 5-20% while reducing material costs by 4-9%. The resulting films exhibit dart impact ≥230 gm, tensile strength ≥25 MPa, and light transmittance ≥55%. Applications include packaging, agricultural, and industrial films with improved mechanical properties, cost-effectiveness, and reduced environmental impact through polymer substitution

No. of Pages : 38 No. of Claims : 39

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025

(21) Application No.202521130669 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Method for Limiting Gaming Addiction through Behavioral Analysis and Manual Control Mechanisms

(51) International classification	:A61B 5/16, A63F 13/00, A61B 5/00, G06N 20/00, A63F 13/212
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Saurabh Balaji Dasare

(57) Abstract :
This invention relates to a method for managing gaming addiction through a comprehensive system that utilizes behavioral analysis and emotional state monitoring. The system employs biometric data, including facial recognition, to detect emotional triggers such as frustration and anxiety during gameplay. Upon identifying these emotions, it enforces personalized interventions, such as pausing the game or limiting playtime, to mitigate excessive gaming behavior. Users can manually configure their gaming limits, and parental controls enable guardians to oversee and adjust their children's gaming activities. Unlike conventional applications, this approach uses advanced machine learning algorithms to provide real-time, adaptive responses based on emotional feedback and gameplay patterns. By integrating with popular gaming platforms, the system fosters a balanced gaming environment, encouraging healthier habits and promoting emotional well-being, ultimately leading to improved mental health outcomes for users.

No. of Pages : 22 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521132082 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Precision-Controlled Jaeger Bubble Pressure System for Surface Tension Measurement

(51) International classification	:G01N 13/02, G01L 13/02, G01L 7/00, G01L 19/06, G01N 13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Dr Kanchan Upadhyay

(57) Abstract :
The present invention provides a modified and improved version of Jaeger's method for accurately determining the surface tension of liquids. Traditional Jaeger's apparatus suffers from limitations such as inconsistent bubble formation, manual errors in capillary positioning, difficulty maintaining constant flow rate, and limited measurement repeatability. The proposed invention introduces a mechanically stabilized adjustable capillary stage, an enhanced U-tube manometer assembly, and a precision-controlled liquid feed mechanism that significantly improve measurement accuracy. The modification includes a structural redesign using a linear screw-driven translation system, enhanced support for the capillary tube, and optimized geometrical alignment for bubble generation, as represented in the apparatus diagrams in the uploaded patent drawings. These innovations allow smooth pressure regulation, reliable bubble formation and breakage, and stable determination of the pressure difference required for computing surface tension. This improvement makes the method more robust, easier to standardize, and suitable for educational, research, and industrial laboratory applications.

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025

(21) Application No.202521132086 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MONITORING SYSTEM FOR ROCKFALL MESHES AND RELATED METHODS

(51) International classification	:G08G 1/01, E01F 7/04, G01L 5/00, G08G 1/0967, G08G 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)KORPALI, Mussaratjahan

(57) Abstract :
A smart, automated monitoring system for rockfall meshes is designed to enhance safety and prevent road blockages. The system integrates IoT-based strain sensors within rockfall meshes to continuously measure real-time strain and tension, detecting potential failures. A communication module transmits this data, while a multi-channel alert system provides timely alerts to road maintenance personnel and stakeholders through visual signals and electronic notifications. This setup ensures continuous monitoring and timely preventive actions, reducing risks associated with rockfalls. The system is scalable, adaptable to various locations, and includes features like solar power for remote operation and traffic management integration for automatic response to detected risks.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025

(21) Application No.202521132092 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SELF-REGULATORY WATERING PLANTER

(51) International classification	:A01G9/02, A01G27/02, A01G27/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)OSWAL, Ekta

(57) Abstract :
A self-regulatory watering planter system (100) is designed with a planter body (101) that includes a built-in reservoir (102) and a divider (104). It features plurality of sensors (106) to monitor soil moisture, nutrients, root health, and plant wellness, all of which communicate with a mobile application (110) for real-time monitoring and user alerts. The system is adaptable to various plant types and offers a sustainable, compact design with a transparent water level indicator. It is suitable for growing herbs, vegetables, or ornamental plants both indoors and outdoors, ensuring minimal maintenance and optimal plant health.

No. of Pages : 8 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202521132094 A
(19) INDIA
(22) Date of filing of Application :26/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SELF-WATERING PLANTER

(51) International classification	:A01G27/06, A01G27/04, A01G27/00, A01G9/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)OSWAL, Ekta

(57) Abstract :
The present invention discloses a self-watering planter system (100) is designed with a planter body (101) that includes a built-in reservoir (102) a divider (103), and a wick-based system (104). The system is adaptable to various plant types and offers a sustainable, compact design with a transparent water level indicator. It is suitable for growing herbs, vegetables, or ornamental plants both indoors and outdoors, ensuring minimal maintenance and optimal plant health.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025

(21) Application No.202521130911 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE MEDICAL DEVICE FOR ON-FIELD CLINICAL DECISION-MAKING

(51) International classification	:A61B 5/00, A61B 10/00, A61B 50/13, A61B 5/145, A61B 5/055
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Jitendra Lohar
3)Shalini Joshi
4)Dr. Jaya Bijoy

(57) Abstract :
A portable medical device for on-field clinical decision-making, comprises of a telescopic handle 101 at top a cuboidal body 102 for convenient transport, a tri-stand elevation module with a plurality of 360° swivel caster wheels 104 for stable positioning and mobility, a probe 105 integrated on an articulated arm 106 embedded with environmental sensors for real-time data collection, a multifunctional digital interface enabling user interaction and status reporting, a health monitoring sensor suite for patient assessment, and multiple compartments 108, 111 and 115 designated for vaccine storage, biological sample preservation, and diagnostic equipment organization, a processing module embedded with artificial intelligence (AI) protocols for data analysis and clinical insight generation, a user interface installed on a computing unit for data management and remote synchronization.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025

(21) Application No.202521130930 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADJUSTABLE SPACER ASSEMBLY FOR FRONT FORK SUSPENSION OF A MOTORCYCLE

(51) International classification	:F16F9/32, F16F9/10, F16F9/48, F16F9/56, F16F9/58, B62K25/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Shailesh M. Vishwakarma
2)Harshal D. Dhoble
3)Shailendra Singh

(57) Abstract :
ABSTRACT Title : Adjustable Spacer Assembly for Front Fork Suspension of a Motorcycle An adjustable spacer assembly (100, 200) for front fork suspension of the present invention comprises of a body (10B, 20B) and a closure element (16D, 20W). The body (10B, 20B) is a unitary structure molded in plastic having an upper portion (10U, 20U) and a lower portion (10L, 20L). The upper portion (10U, 20U) is configured to abut with the bottom surface of a fork bolt (FB) and the closure element (16D) having a circular profile is configured to be detachably attached to the lower end (10L, 20L) of the unitary body structure (10B, 20B) thereby enabling an adjustment of spring preload and variation of the working fluid volume within the fork tube (FT). This unique construction of spacer enables tool-free or simple threaded preload adjustment with accuracy and ensures effective sealing against oil leakage using O-rings. It not only reduces the manufacturing cost but is compatible with a wide range of motorcycle front fork configurations. (Refer Fig. 1)

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025

(21) Application No.202521131013 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Evaluation of the comparative effect of daucus carota and Aloe vera

(51) International classification	:A61K 36/886, A61K 36/896, A61Q 19/08, A23L 33/105, A61K 8/9794
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Manju Prajapati
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(57) Abstract :
[046] The present invention relates to a novel genoprotective composition and method involving extracts of Daucus carota (carrot) peel and Aloe vera for the prevention, reduction, and repair of DNA damage in mammalian cells. The invention discloses the preparation of aqueous, ethanolic, methanolic, or hydroalcoholic extracts from carrot peel and Aloe vera gel, either individually or in specific ratios, to maximize DNA-protective efficacy. Comparative evaluation demonstrates that Daucus carota peel extract exhibits stronger genoprotective potential than Aloe vera, while their combination produces a synergistic effect, resulting in up to 85% reduction in DNA fragmentation. The extracts further reduce oxidative stress markers, chromosomal aberrations, and reactive oxygen species, thereby protecting cellular integrity. The composition may be formulated into nutraceutical supplements, pharmaceutical adjuncts, functional foods, beverages, or cosmetic preparations for anti-aging and UV protection. The invention uniquely combines agricultural waste valorization with preventive healthcare, offering a cost-effective, eco-friendly, and highly effective natural alternative to synthetic antioxidants, with wide applicability across nutraceutical, pharmaceutical, and cosmetic industries.
Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131678 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INJECTABLE CROSS-LINKED HYDROGEL COMPOSITION FOR PERMANENT VITREOUS REPLACEMENT

(51) International classification	:C08L71/02, A61L27/26, C08L5/08, A61L27/16, A61L27/18, A61L27/20, A61L27/50, A61L27/52
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT INJECTABLE CROSS-LINKED HYDROGEL COMPOSITION FOR PERMANENT VITREOUS REPLACEMENT
An artificial vitreous implant composition for permanent vitreous replacement is disclosed. The composition comprises a first component including multi-arm polyethylene glycol functionalized with maleimide groups at 2-4% w/v and a second component including thiolated hyaluronic acid at 0.5-1.5% w/v, both in physiologic buffer. The components undergo crosslinking via Michael addition when mixed to form an in-situ hydrogel within 2-4 minutes at body temperature. The hydrogel exhibits refractive index of 1.336-1.340, optical transmission exceeding 95%, neutral buoyancy with density 0.99-1.02 g/mL, and storage modulus of 0.05-0.5 Pa matching natural vitreous. A sterile dual-syringe delivery system with static mixing element and 23-27 gauge injection cannula enables surgical administration. The composition provides permanent transparent vitreous replacement without requiring removal or postoperative positioning, addressing limitations of silicone oil and gas tamponades used in vitreoretinal surgery. [To be published with Figure 1]

No. of Pages : 34 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131679 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI-AXIS OPHTHALMIC TRAINING SOCKET SYSTEM WITH ADJUSTABLE TENSION MEMBERS AND SPECULUM-READY EYELID ASSEMBLIES

(51) International classification	:G09B 27/08, G09B 23/30, A61F 9/007, G09B 19/00, G09B 23/28
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT MULTI-AXIS OPHTHALMIC TRAINING SOCKET SYSTEM WITH ADJUSTABLE TENSION MEMBERS AND SPECULUM-READY EYELID ASSEMBLIES An ophthalmic surgical training socket system for mounting and supporting an eye globe for surgical training is disclosed. The system comprises a base structure, a gimbal assembly rotatably mounted on the base structure providing multi-axis rotational movement, and a globe holder forming a socket with a coupling mechanism configured to receive either a synthetic artificial eye globe or a preserved donor eye globe. The system includes tension members positioned at anatomical muscle insertion locations providing adjustable resistance simulating extraocular muscles. The system further comprises upper and lower eyelid assemblies with tarsal inserts encapsulated in elastomeric material and canthal support structures configured to receive eyelid speculum tips. A palpebral aperture adjustment mechanism varies eyelid opening width from six to twelve millimeters. [To be published with Figure 1]

No. of Pages : 32 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131680 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR MULTIMODAL OBJECTIVE PAIN ASSESSMENT USING WEARABLE SENSORS

(51) International classification	:A61B 5/00, A61B 5/11, A61B 5/0205, A61B 5/024, A61B 5/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR MULTIMODAL OBJECTIVE PAIN ASSESSMENT USING WEARABLE SENSORS A system for objective pain mapping in subjects is disclosed. The system comprises a memory and a processor coupled to the memory executing programmed instructions for acquiring physiological and biomechanical data from a wearable device including an inertial measurement unit, surface electromyography sensor, pressure sensor, electrodermal activity sensor, and photoplethysmography sensor. The processor establishes a baseline profile, executes standardized provocation and relief testing sequences, performs validation testing using sham pressure stimuli, and analyzes multimodal sensor data using neural network models. The processor computes quantitative pain indices including Movement Intolerance Index, Relief Response Index, Autonomic-Pain Coupling metric, and Consistency Index representing concordance across modalities and trial repetitions. The system generates a Pain versus Movement Map identifying body regions with corresponding pain severity scores. [To be published with Figure 1]

No. of Pages : 57 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130185 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR IMPROVING A BATTERY LIFE

(51) International classification	:G01R31/36, G01R31/367, G01R31/389, G01R31/392, G01R31/396
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Prashant Aher
2)Rhugved Rane
3)Abhishek Mandhana
4)Mangesh Khare

(57) Abstract :
SYSTEM AND METHOD FOR IMPROVING A BATTERY LIFE The present disclosure provides a system and a method for improving a battery life. The method100 and the system300 include a control module304 to perform multiple tasks. The control module304 is configured to obtain a plurality of data, develop a model based on the obtained data, identify and estimate a plurality of model parameters of the developed model, perform a sensitivity analysis on the developed model to determine the influence of each model parameter on battery performance and degradation, classify the plurality of model parameters into at least two groups, develop an optimization framework using the developed model and the classified at least one group of the plurality of model parameters, to determine a charging profile, and apply the determined charging profile to the battery302 under one or more operational constraints. FIG.1

No. of Pages : 36 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130220 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ANTIMICROBIAL BACTERIOSTATIC MICROENCAPSULATED FORMULATION WITH ALOE VERA, NEEM, ESSENTIAL OILS AND METHOD FOR PREPARATION THEREOF

(51) International classification	:A61K 8/11, A61K 8/73, A61K 8/72, A61K 8/18, A61K 8/00, D06M 23/00, D06M 23/12, A61K 8/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ANTIMICROBIAL BACTERIOSTATIC MICROENCAPSULATED FORMULATION WITH ALOE VERA, NEEM, ESSENTIAL OILS AND METHOD FOR PREPARATION THEREOF The present invention relates to a microencapsulated antimicrobial textile finish formulation comprising active components and encapsulation components. The active components comprise 5–30% neem extract (Azadirachta indica), 2–15% aloe vera extract (Aloe barbadensis), and 2–15% essential oils by weight of the total formulation. The encapsulation components comprise polymer shell materials comprising 30–60% chitosan shell material and 30–60% cationic biopolymer shell material by weight of individual microcapsule mass. The formulation demonstrates superior antibacterial efficacy with greater than 99% bacterial reduction maintained after 20 wash cycles, no bacterial regrowth within 24 hours, and dermatological safety confirmed as non-irritant for all skin types. The formulation is suitable for medical, hygiene, and consumer textile applications while maintaining 100% natural composition, formaldehyde-free biodegradable properties, and controlled release characteristics. (Figure 1)

No. of Pages : 38 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130231 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Dual-Function Mosquito Repellent and Camphor Vaporizer Device

(51) International classification	:A01M 13/00, A01M 1/20, A01M 29/12, A61M 11/04, A24F 40/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a dual-function household vaporizer device configured to integrate mosquito repellent vaporization and camphor vaporization within a single compact enclosure (100). The device includes a camphor holder (101) with associated camphor vapor outlet vents (102) disposed on an upper portion of the enclosure and a mosquito repellent liquid container (103) disposed on a lower portion of the enclosure in a spatially separated arrangement. A user-operable control interface, comprising a control knob (104), an indicator light (105), and a manual ON/OFF switch (106), enables selective manual operation of the device in one of the two vaporization modes. In operation, the device allows a user to manually select either a mosquito repellent vaporization mode or a camphor vaporization mode, wherein vapour corresponding to the selected mode is released through the respective outlet. The device operates entirely based on manual user input, without reliance on automated control, sensors, or electronic decision-making systems. The spatial arrangement of the camphor holder and the mosquito repellent liquid container within the single enclosure enables independent operation of each vaporization function while maintaining a compact and user-friendly structure. By integrating two commonly used household vaporization functions into a single appliance, the invention reduces the need for multiple standalone devices, conserves space, and enhances user convenience. The device is suitable for indoor domestic environments such as bedrooms, living spaces, and prayer areas, offering a simple, cost-effective, and reliable vaporization solution. The invention provides a practical structural and functional integration of known vaporization systems, resulting in improved usability without increasing operational complexity.

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131185 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Electromagnetic and Vibration Therapy Device for Enhanced Homeopathic Treatment Outcome for Rheumatoid Arthritis

(51) International classification	:A61H 23/02, A61N 1/36, A61N 2/02, A61N 1/40, A61N 2/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An AI-enabled therapeutic device (100) for management of rheumatoid arthritis is disclosed, wherein a processor (110) executing artificial intelligence algorithms (120) receives patient-specific physiological data (130) and performs real-time analysis to personalize therapy delivery. The device (100) includes electromagnetic therapy modules (140) that are controlled to dynamically adjust electromagnetic therapy parameters, including frequency, intensity, and duration, based on interpreted inflammatory responses and biomarkers (220). The device (100) further includes vibrational therapy modules (150) controlled to modulate vibration frequency and intensity based on AI-driven physiological feedback (330) and to target vibrational therapy to therapeutic hotspots (340) associated with inflammation and joint pain. The device (100) also includes an integration means (160) configured to select and optimize homeopathic remedies (420), utilizing patient-specific therapeutic response patterns (410), wherein remedy optimization is continuously updated as the patient's response evolves. Machine learning techniques (600) refine therapy parameters (610) over repeated usage to improve patient-specific outcomes.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131186 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Artificial Intelligence Based Intelligent Voice Assistant System for Context Aware Interaction and Autonomous Task Execution

(51) International classification	:G10L 15/22, G10L 15/06, G10L 15/18, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract This invention provides an AI-based intelligent voice assistant system designed for context-aware natural language interaction. It incorporates a hybrid computing architecture involving on-device private speech recognition, deep learning-based language interpretation, reinforcement learning-based memory retention and secure autonomous task execution. The system enhances response accuracy, reduces reliance on external servers, improves user privacy and supports integration across connected digital platforms.

No. of Pages : 6 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202521131187 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Advanced Farm Development Card

(51) International classification	:G06Q 50/02, G06Q 10/06, G06Q 40/00, G06N 5/02, G06Q 10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Prof. (Dr.) Vandana Singh

(57) Abstract :
ABSTRACT . There is a thumb rule that 5% of a population has the ability/potential to go for entrepreneurship. In order to promote large scale business by the farmers and empowering of the farmers, an innovative concept/technology developed, known as “Farm Development Card” which is nothing but a customized business plan for an individual farmer based on resource availability at his command, the possession of knowledge/skill of farmer and farmer’s market opportunities to achieve his/her target or double the farmers income. FDC also includes soil health card/soil health. Doubling the farmer’s income should be accompanied with implementation of Farm Development card, and implementation of soil health card on large scale may be a mis-match

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131188 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI based Trading Prediction Algorithm

(51) International classification	:G06Q 40/04, G06Q 40/00, G06N 20/00, G06Q 40/06, G06N 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Prof. (Dr.) Vandana Singh

(57) Abstract :
ABSTRACT [515] The integrated methodology combines multi-timeframe technical analysis techniques with artificial intelligence-driven pattern recognition systems, leveraging variable-confidence prediction signals and multi-factor market indicators to optimize trading procedures and decision workflows for maximum prediction accuracy and minimal forecasting uncertainty during critical trading applications. [520] The novel responsive algorithmic architecture features engineered high-precision prediction components with specialized market fingerprinting protocols, enabling complex multi-stage signal verification while ensuring forecast consistency and performance optimization across various financial instruments without compromising system reliability. [525] The innovative design incorporates strategic validation mechanisms for enhanced market identification and trading security, utilizing optimized multi-asset systems and adaptive prediction technology to ensure legitimate signal generation while maintaining functionality across diverse market environments and trading scenarios. [530] Implementation methodology emphasizes scalable algorithmic integration and efficient prediction sequences, implementing interactive validation measures and pattern recognition algorithms to achieve superior trend determination, enhanced market identification, and false signal prevention while ensuring technological simplicity during portfolio monitoring. [535] The system demonstrates exceptional adaptability through comprehensive integration of market identification protocols and intelligent prediction technologies, validating its effectiveness across various multi-asset trading configurations and market scenarios while maintaining consistent forecasting performance and operational efficiency under diverse conditions. [540] The developed framework enables sustainable and reliable execution of trading strategies through streamlined, AI-powered prediction systems, providing significant advantages over traditional trading approaches through variable confidence mechanisms, adaptive identification protocols, and improved signal assignment while maintaining superior forecasting accuracy during critical trading execution procedures

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025

(21) Application No.202521132096 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN ANTI-FREEZING HYDROGEL MATRIX

(51) International classification	:A61K9/70, A61K47/32, C08L29/04, A61K47/10, A61K47/36, A61K47/26, A61L24/04, A61L24/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)BHENDE, Manisha
3)MULWANI, Priyanshi
4)LAL, Mily

(57) Abstract :
ABSTRACT AN ANTI-FREEZING HYDROGEL MATRIX The present invention discloses an anti-freezing hydrogel matrix consisting of a) polyvinyl alcohol (PVA); b) an anti-freezing agent; and c) other pharmaceutical excipients. The present invention also discloses a method for preparing the anti-freezing hydrogel matrix. The anti-freezing hydrogel matrix of the present invention is formulated without toxic crosslinkers, ensuring biocompatibility suitable for diverse industrial and biomedical uses.

No. of Pages : 10 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521132152 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Federated Explainable Intrusion Detection Framework Using Convolutional and Bidirectional Recurrent Neural Networks for Critical IoT Systems

(51) International classification	:G06N 3/04, G06N 3/08, H04L 29/06, G06F 21/55, H04L 9/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Akhilesh Chouhan
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10)Saksham Kumar

(57) Abstract :
An explainable and secure intrusion detection system for critical Internet-of-Things (IoT) environments is disclosed. The system employs a federated learning architecture that integrates convolutional neural networks (CNN) and bidirectional long short-term memory (Bi-LSTM) networks to detect cyber intrusions across distributed IoT nodes while preserving data privacy. Local models are trained on heterogeneous IoT data and collaboratively aggregated through a hierarchical multi-stage fusion process that adapts to varying computational capabilities and dynamic participation of devices without degrading detection accuracy. To enhance robustness, the system incorporates defensive mechanisms against adversarial attacks, including data poisoning, label manipulation, and malicious model updates, using update validation, anomaly scoring, and secure aggregation techniques. Additionally, the system provides explainability through feature importance analysis and decision interpretation modules, enabling transparency, trust, compliance, and forensic analysis of intrusion decisions. The disclosed system achieves high detection accuracy, resilience to tampering, reduced reliance on raw data sharing, and rapid adaptability, making it suitable for deployment in critical IoT applications such as industrial automation, healthcare systems, smart energy infrastructure, and other cyber-physical systems.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521132155 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Process for the preparation of copper supported tungsten oxide nanocomposite for electrochemical sensing of morphine

(51) International classification	:G01N 27/00, G01N 27/26, B82Y 30/00, B82Y 40/00, G01N 27/30, G01N 27/327, H01M 4/90, B82Y 15/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Ruturaj Solanki
4)Dr. Ajay Soni
5)Dixit Patel

(57) Abstract :
ABSTRACT Process for the preparation of copper supported tungsten oxide nanocomposite for electrochemical sensing of morphine The present invention describes a process for morphology-controlled synthesis of nanostructured copper supported on tungsten oxide with strong metal support interaction and low loading of active metal, which is used for the preparation of electrodes for electrochemical sensing of morphine. Copper nitrate trihydrate and cetyltrimethylammonium bromide solutions are added to tungstic acid solution, stirred, cooled, washed, dried and calcinated to form the copper supported on tungsten oxide nanocomposite. For electrochemical sensing of morphine, the dispersed nanocomposite is layered on polished glassy carbon electrode, which is used as the working electrode, Ag/AgCl electrode is used as the reference electrode and platinum electrode is used as the reference electrode in a three electrode setup. The process is a one-pot, simple, easy and economical process for highly selective detection of morphine at upto 0.1 µM concentration. Fig. 5

No. of Pages : 28 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025
(21) Application No.202521131018 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Evaluation of protective effect of Aegle marmelos fruit on Diclofenac Sodium induced gastrointestinal toxicity

(51) International classification	:A61K31/196, A61P1/04, A61P29/00, A61K36/75, A61K131/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
[045] The present invention relates to a novel herbal-based pharmaceutical and nutraceutical composition for reducing or preventing Diclofenac Sodium-induced gastrointestinal toxicity using Aegle marmelos fruit extract. The extract, standardized to contain bioactive phytoconstituents such as marmelosin, tannins, flavonoids, and phenolic compounds, exhibits potent antioxidant, cytoprotective, and anti-inflammatory activities. The invention provides both stand-alone formulations and fixed-dose combinations of Diclofenac Sodium with Aegle marmelos extract to minimize gastric ulceration, mucosal erosion, hemorrhage, and oxidative stress while retaining therapeutic efficacy of the NSAID. Experimental studies demonstrated significant reduction in ulcer index, improved gastric mucus secretion, and restoration of gastric mucosal integrity upon administration of the extract. The composition may be formulated into capsules, tablets, syrups, suspensions, or functional foods, and administered in effective doses to human subjects undergoing long-term NSAID therapy. The invention thus offers a safe, natural, and synergistic strategy for enhancing patient compliance and reducing gastrointestinal side effects of NSAIDs. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/12/2025

(21) Application No.202521131023 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Nutritional and Therapeutic Significance of Aloe vera in the Prevention and Management of Heat Stroke

(51) International classification	:A61K 36/886, A61K 36/896, A61P 39/06, A61F 7/00, A61F 7/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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3)Dr. Hemkumari Patel
4)Mr. Manoj Kumar

(57) Abstract :
The present invention relates to a natural, plant-based system for the prevention and management of heat stroke, commonly known as loo, caused by prolonged exposure to extreme environmental heat. The invention utilizes Aloe vera gel as a primary functional component due to its high water content, balanced electrolytes, antioxidant activity, anti-inflammatory properties, and natural cooling effect. The system supports rapid rehydration, restoration of electrolyte balance, regulation of body temperature, and protection against oxidative and cellular damage associated with heat stress. Bioactive compounds such as vitamins C and E, beta-carotene, polysaccharides, and essential minerals collectively enhance thermoregulation and physiological stability. The invention can be used both orally and topically, providing internal and external cooling benefits without synthetic additives. Its simple preparation, affordability, safety, and suitability for low-resource settings make it an effective preventive healthcare solution for populations exposed to extreme heat, particularly in tropical and subtropical regions.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202521131036 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Behavioral Bias Detection and Mitigation in Initial Public Offering Investment

(51) International classification	:G06Q 40/00, G06Q 40/06, G06Q 40/04, G06Q 30/02, G06Q 30/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Karthika P. Devan
4)Dr. Deepak R. Sahoo

(57) Abstract :
SYSTEM AND METHOD FOR BEHAVIORAL BIAS DETECTION AND MITIGATION IN INITIAL PUBLIC OFFERING INVESTMENT PLATFORMS ABSTRACT The current invention proposes a new form of methodology of researching and quantifying the dissimilarity of effect of behavioral prejudice concerning the investment choices of the initial public offering (IPO) trading item. Traditional financial theories (based on the fact that investors are rational), cannot account for the market phenomena like IPO under-pricing comprehensively. This study fills in the mentioned gap, as it is a straight comparative analysis of two possibly different investor groups novice investors (students) and experienced market professionals.It is technically implemented using a web-based experimental platform which uses a Bias Quantification Module (BQM) to assess the susceptibility of the participants to the core cognitive biases such as anchoring, herding, and overconfidence to core IPO situations in controlled, hypothetical conditions. The hypothesis that the professionals are much less susceptible to these heuristics in comparison with the novice professionals is tested by means of advanced statistical analysis, namely, the use of a regression model which allows introducing an experience-bias interaction term to it. The main one is the creation of group-specific behavioral profiles, which can be translated into practical information towards designing specific de-biasing interventions in the interpretation of financial education and improvement of risk-management models in the capital markets.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131189 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE TRUST CALIBRATION SYSTEM FOR HUMAN-AI COLLABORATION IN CYBERSECURITY DECISION MAKING

(51) International classification	:G06N 20/00, H04L 29/06, G06Q 10/06, G06N 5/04, G06F 21/57
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT The invention relates to an adaptive trust-calibration system designed to improve collaboration between human analysts and AI-based cybersecurity decision engines. The system collects interaction data including recommendations, overrides, contextual metadata, and outcome accuracy, and computes dynamic trust scores for both human and AI participants. A trust-modelling engine analyses agreement patterns, behavioural tendencies, and contextual reliability signals to continuously recalibrate trust values. A decision-mediation interface presents AI outputs together with calibrated trust indicators, enabling transparent human oversight and reducing misaligned trust behaviours. An adaptive collaboration module adjusts decision authority and operational modes based on real-time trust levels and risk severity. A governance layer maintains a tamper-evident audit trail of trust evolution, decision pathways, and validation events to support compliance and forensic review. The invention forms the basis of an operational platform that enhances decision reliability, explainability, and accountability in AI-assisted cybersecurity environments

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131190 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HUMAN-CENTRIC AI DECISION ORCHESTRATION FRAMEWORK FOR ADAPTIVE CYBERSECURITY RISK INTELLIGENCE

(51) International classification	:H04L 29/06, G06F 21/57, G06N 20/00, H04L 9/40, G06N 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT The present invention relates to a human-centric AI decision-orchestration framework for adaptive cybersecurity risk intelligence. The invention provides an integrated architecture that unifies AI-generated predictions, human analyst judgment, and contextual cybersecurity intelligence into a single, adaptive decision-making workflow. The system comprises a Risk Intelligence Aggregation Module configured to collect, normalize, and enrich multi-source security data including threat alerts, vulnerability metrics, asset criticality, user-behavior patterns, and external threat intelligence. An AI Decision Engine analyzes this data to generate risk assessments, anomaly scores, and predictive threat classifications. A Human Insight Modelling Module constructs analyst-specific insight profiles based on expertise characteristics, behavioral tendencies, and contextual reasoning signals. A Decision Orchestration Core synthesizes AI outputs, human insight profiles, and contextual intelligence to determine decision pathways, escalation logic, automation levels, and human–AI collaboration modes. An Explanation and Transparency Layer produces interpretable reasoning summaries, orchestration traces, and human-AI interaction logs to support auditability and trust. A Policy and Governance Compliance Module enforces organizational rules and regulatory requirements while maintaining a tamper-evident repository of all decision outcomes, explanations, and intelligence pathways. By dynamically balancing AI autonomy with human expertise, and by providing explainable, context-aware, and governance-aligned decision intelligence, the invention enhances accuracy, operational efficiency, auditability, and reliability across Security Operations Centres, MSSPs, cloud environments, and regulated industries. The framework improves decision quality, reduces analyst workload, mitigates automation bias, and ensures consistent, transparent cybersecurity decision-making in adaptive risk environments.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131681 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : OPHTHALMIC SURGICAL TRAINING APPARATUS WITH CLOSED-LOOP PRESSURE CONTROL AND MULTI-PARAMETER SENSING

(51) International classification	:G09B 23/28, G09B 23/30, G09B 23/32, G09B 23/34, A61F 9/007
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT OPHTHALMIC SURGICAL TRAINING APPARATUS WITH CLOSED-LOOP PRESSURE CONTROL AND MULTI-PARAMETER SENSING An ophthalmic surgical training apparatus for simulating microsurgical procedures is disclosed. The apparatus comprises a mechanical globe assembly having biomimetic eyeball structure with replaceable training modules, a fluidic control module operatively coupled to the mechanical globe assembly, a sensor array assembly operatively associated with the mechanical globe assembly, and an electronic control console electrically connected to the fluidic control module and sensor array assembly. The fluidic control module regulates intraocular pressure through closed-loop feedback control maintaining pressure in a range of 8 to 60 millimeters of mercury with accuracy of plus or minus 1 millimeter of mercury and settling time under 1 second. The sensor array assembly measures incision forces, instrument torques, and chamber pressure variations at sampling frequency of at least 100 hertz. The electronic control console processes measurement data to compute training metrics including incision quality index, pressure stability index, leak-rate estimate, and tremor metric. [To be published with figure 1]

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131682 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR SPECTACLE-MOUNTED MULTI-SENSOR MONITORING OF RESPIRATORY AIRFLOW AND HEMODYNAMIC PARAMETERS

(51) International classification	:A61B 5/00, A61B 5/08, A61B 5/0205, A61B 5/01, A61B 5/087
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR SPECTACLE-MOUNTED MULTI-SENSOR MONITORING OF RESPIRATORY AIRFLOW AND HEMODYNAMIC PARAMETERS A computer-implemented system for integrated monitoring of respiratory airflow, hemodynamic parameters, and autonomic balance using spectacle-mounted sensors is disclosed. The system comprises a processor coupled to a memory and configured to acquire bilateral nasal airflow signals from left and right nasal ring sensors positioned adjacent to respective nostrils, temperature data from micro-infrared sensors, acoustic data from MEMS microphones, and photoplethysmography signals from a PPG module mounted on a spectacle frame. The processor processes the bilateral airflow signals to compute a Nasal Airflow Symmetry Index indicating dominance patterns of nasal breathing, derives respiratory parameters including respiratory rate and tidal volume surrogate, and extracts cardiovascular parameters including heart rate, oxygen saturation, and heart rate variability metrics from the photoplethysmography signals. The processor generates a Pranic Balance Index by combining the Nasal Airflow Symmetry Index, heart rate variability metrics, and inspiratory-expiratory duty ratio variance. [To be published with Figure 1]

No. of Pages : 56 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131683 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SURGICAL GRAFT APPARATUS WITH ORIENTATION-MARKING SYSTEM AND CARRIER ASSEMBLY FOR OCULAR SURFACE RECONSTRUCTION

(51) International classification	:A61F 9/007, A61F 2/14, A61F 9/013, A61B 19/00, A61B 17/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SURGICAL GRAFT APPARATUS WITH ORIENTATION-MARKING SYSTEM AND CARRIER ASSEMBLY FOR OCULAR SURFACE RECONSTRUCTION A surgical graft apparatus for ocular surface reconstruction is disclosed. The apparatus comprises a biological tissue substrate having an epithelial surface layer and a stromal surface layer, wherein the substrate is pre-cut to predetermined dimensions. The apparatus includes an orientation indicator subsystem integrated with the tissue substrate, comprising at least one orientation marking element configured to identify the stromal surface. The apparatus further comprises a carrier film assembly bonded exclusively to the stromal surface layer, providing mechanical support during handling. The carrier film positioning unequivocally denotes stromal-side orientation. In some embodiments, the substrate includes a peripheral fenestration ring structure with micro-perforations facilitating fluid passage, and a micro-scalloped limbal edge geometry matching anatomical contours. The apparatus provides reduced surgical orientation errors and improved handling characteristics through integration of multiple orientation identification mechanisms and engineered structural features optimized for surgical implantation procedures. [To be published with Figure 1]

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521131841 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Secure Battery Charging System with Life Cycle Monitoring and Cloud-Based Data Management

(51) International classification	:H02J7/00, H02J7/40, H02J7/80, H02J7/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a secure electric vehicle's battery charging system with an integrated life cycle counter, particularly applicable to rechargeable battery-based devices and electric charging applications. The proposed system employs an authentication mechanism using radio frequency identification (RFID) to permit or deny access to the charging process. An RFID scanner is configured to read a unique identification credential from an authorized card or tag and compare it with pre-stored authentication data within a control unit. Upon successful authentication, the system enables charging by activating a switching element, such as a relay module, and simultaneously records the charging event by incrementing a life cycle counter associated with the battery. The life cycle counter continuously tracks the number of authenticated charging cycles, thereby providing an indication of battery usage history and aiding in estimation of battery health and remaining service life. If authentication fails, the system prevents charging and generates a user notification, ensuring protection against unauthorized usage and enhancing operational safety. A display interface provides real-time system status and access information to the user. The invention improves battery management by combining secure access control with accurate charge cycle monitoring, thereby extending battery lifespan, preventing misuse, and enabling informed maintenance or replacement decisions. The system is scalable and can be implemented across various battery-powered applications, including electric vehicles, portable energy storage systems, and industrial charging infrastructures.

No. of Pages : 16 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131851 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR LOCAL-FIRST ARTIFICIAL INTELLIGENCE BASED PERSONALIZED MOCK INTERVIEW PROCESSING

(51) International classification	:G06N 5/04, G06Q 10/10, G06F 16/332, G06N 5/02, G06F 16/33
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Omkar Pant
3)Zeeshan Ansari
4)Priyanshu More

(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR LOCAL-FIRST ARTIFICIAL INTELLIGENCE BASED PERSONALIZED MOCK INTERVIEW PROCESSING A computer-implemented system for conducting artificial intelligence based personalized mock interviews with complete data privacy is disclosed. The system comprises a processor and memory executing instructions for receiving interviewer persona, job role, and difficulty level parameters. A resume processing module parses uploaded documents extracting candidate profile information stored locally. A prompt generation module compiles contextual prompts integrating persona, role, difficulty, and profile information. An artificial intelligence inference module generates personalized questions processing prompts through a locally executing language model. A conversation management module tracks dialogue history maintaining sequential context. A speech interface module processes audio input for speech-to-text conversion and generates synthesized speech output. A feedback generation module synthesizes performance evaluations analyzing dialogue history using the local model. The system operates as a three-tier architecture with localhost communication preventing external data transmission, thereby preserving candidate data privacy, eliminating cloud dependencies, and reducing inference latency through on-device processing. [To be published with Figure 1]

No. of Pages : 51 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131191 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Enabled Detection System for Identifying Smart-Glasses Recording in High-Security Facilities

(51) International classification	:H04N 7/18, G08B 13/196, G06F 3/01, G06V 40/20, G06V 40/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Anand Kadukuntla

(57) Abstract :
ABSTRACT The present invention relates to an AI-enabled detection system configured to identify covert video or audio recording attempts performed through smart-glasses or similar camera-embedded wearable devices within high-security facilities. The system operates as an intelligent surveillance layer that augments existing physical-security controls and is specifically designed to address threats that cannot be reliably detected through traditional CCTV monitoring, RF scanning, metal detectors, or manual inspection. A multimodal sensor acquisition unit captures optical reflections, micro-glare signatures, motion patterns, head-orientation trajectories, gesture interactions, blink-trigger sequences, and optional electromagnetic or thermal anomalies associated with wearable devices. A pre-processing and feature-normalization module filters noise, aligns multimodal data streams, and extracts discriminative features for analysis. An AI-based detection engine, implemented using machine-learning or deep-learning models, performs behavioral classification and anomaly detection to determine the probability that a user wearing eyewear is actively recording. A contextual risk-assessment module correlates detection outputs with facility-specific parameters, including zone sensitivity, user access level, time-of-event, and operational conditions, to generate a dynamic risk index. When the risk index exceeds a configurable threshold, an alerting and evidence-logging module issues real-time notifications to security personnel and creates tamper-evident evidence packets containing sensor features, risk scores, and contextual metadata for audit and forensic use. An integration and interoperability layer enables seamless connectivity with CCTV systems, access-control platforms, SIEM/SOC tools, and other security infrastructure. The invention provides a non-intrusive, automated, and highly accurate method for detecting covert recording through smart-glasses, thereby mitigating insider threats, preventing unauthorized surveillance, and enhancing regulatory compliance in banking, defense, intelligence, research, critical-infrastructure, and other sensitive environments.

No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131192 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Adaptive Fairness-Driven Explainable Intelligence System for Ethical Human-Centric Decision Automation

(51) International classification	:G06N 5/04, G06N 20/00, G06N 5/02, G06Q 10/06, G06N 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT The invention relates to an adaptive fairness-driven explainable intelligence system for ethical human-centric decision automation. The system integrates a Fairness Data Aggregation Module that performs fairness-aware preprocessing of heterogeneous input data, an Explainable Intelligence Engine that generates predictions together with interpretable explanation artifacts, a Human-Centric Oversight Layer that captures expert judgment and overrides, and an Ethical Decision Automation Core that fuses AI outputs, fairness indicators, human inputs, and policy constraints to determine decision pathways and automation levels. A Fairness-Monitoring and Bias Mitigation Module continuously evaluates subgroup fairness metrics, detects ethical drift, and triggers bias-mitigation actions, while a Governance, Compliance and Transparency Module stores decisions, explanations, fairness records, and human interventions in a tamper-evident ledger and produces regulator-ready reports. The system thereby provides adaptive, transparent and ethically governed automation of high-impact socio-technical decisions

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521132179 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Operation and Supply Chain Management System in Healthcare Sector

(51) International classification	:G06Q 10/08, G16H 40/20, G06Q 50/22, G06Q 10/06, G16H 10/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Operation and Supply Chain Management System in Healthcare Sector The present invention relates to an Operation and Supply Chain Management System specifically developed for the healthcare sector, providing an integrated and centralized digital platform to manage healthcare operations, inventory control, procurement processes, and logistics activities. The system is designed to coordinate the flow of medical resources such as medicines, surgical instruments, diagnostic equipment, and consumables across hospitals, clinics, pharmacies, and healthcare networks. By unifying operational and supply chain functions, the invention addresses inefficiencies arising from fragmented systems, manual processes, and limited visibility into healthcare resource utilization. The system functions by continuously collecting real-time data from healthcare operational workflows, including patient admissions, treatment schedules, and medical resource consumption, along with supply chain data such as stock availability, supplier status, and delivery timelines. This data is analyzed to monitor inventory levels, identify usage patterns, and generate accurate demand forecasts. Automated alerts and replenishment mechanisms are provided to prevent shortages, reduce excess inventory, and minimize losses caused by expired or unused medical supplies, thereby supporting cost-effective and reliable healthcare operations. The invention further offers a centralized dashboard and reporting interface that provides healthcare administrators, supply chain managers, and decision-makers with real-time visibility into operational performance and supply chain efficiency. By integrating clinical requirements with supply chain planning, the system enables informed decision-making, improved coordination among stakeholders, and timely availability of critical medical resources. As a result, the proposed system enhances operational efficiency, strengthens supply chain resilience, and contributes to improved patient care and overall healthcare service delivery.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521132182 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PHARMACEUTICAL COMPOSITION AND RELATED METHODS FOR MANAGEMENT OF HAIRFALL

(51) International classification	:A61Q7/00, A61K8/02, A61K8/18, A61K8/97, A61K47/38, A61K47/02, A61K47/26, A61K47/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)DOKANIA, Shashank
3)SHEKHAR, Himanshu

(57) Abstract :
A pharmaceutical composition for managing hair fall in the form of a capsule comprising botanical and mineral actives including jaborandi Q, fluoricum acidum, natrum muriaticum, lycopodium clavatum, silicea, and selenium in defined proportions, along with pharmaceutically acceptable excipients. The composition includes suitable diluents and disintegrating agents to ensure uniform dosing, capsule stability, and rapid disintegration after ingestion. The actives are processed using a controlled adsorption and gentle blending approach, wherein liquid actives are uniformly adsorbed onto a solid carrier without high-shear processing, thereby preserving functional integrity. The composition supports hair follicle nourishment, scalp nutrition, regulation of stress- and hormone-related hair loss, strengthening of hair roots, and promotion of healthy hair regrowth, and is designed to aid in the management of excessive hair fall, hair thinning, and poor hair quality.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521132193 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A System and method of secure remote court room proceedings using encrypted multi layer validation

(51) International classification	:H04L 9/32, H04L 9/08, H04L 29/06, H04L 9/40, H04L 9/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A System and method of secure remote court room proceedings using encrypted multi layer validation The present disclosure relates to a system and method for conducting secure remote courtroom proceedings using encrypted multi-layer validation. The system provides a technically advanced judicial communication framework that enables legally compliant virtual hearings by integrating hardware-anchored device authentication, continuous biometric-behavioral identity validation, and multi-layer encrypted communication. The disclosure further ensures judicial integrity through real-time environment verification, artificial intelligence based detection of impersonation and deepfake manipulation, and cryptographically immutable evidentiary provenance management for maintaining chain-of-custody of digital evidence. A processor-controlled judicial command and compliance module enables active enforcement actions, including re-authentication, evidence authorization, and session control during live proceedings. Upon detection of security or integrity violations, the system automatically initiates tamper-responsive enforcement actions to preserve judicial sanctity. The disclosed system and method provide measurable technical effects in terms of enhanced security, identity assurance, evidentiary reliability, and judicial enforceability, thereby overcoming the limitations of conventional software-based remote hearing platforms and enabling secure, verifiable, and trustworthy remote courtroom operations.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131852 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR DETECTING FINANCIAL FRAUD IN TRANSACTION DATA USING MACHINE LEARNING

(51) International classification	:G06Q 20/40, G06N 20/00, G06Q 40/00, G06Q 40/02, G06Q 40/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)TANYA SINGH
3)NAKSHATRA SAWARKAR

(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR DETECTING FINANCIAL FRAUD IN TRANSACTION DATA USING MACHINE LEARNING A computer-implemented system for detecting financial fraud in transaction data using machine learning is disclosed. The system comprises a processor coupled to a memory, wherein the processor executes a data acquisition module to receive transaction data including transaction amounts, timestamps, geographical coordinates, and account balances from user devices via a network. The processor executes a preprocessing module to handle missing values and extract temporal features. The processor executes a feature engineering module to generate geospatial distance metrics using Haversine formula, balance error metrics, and transaction velocity metrics. The processor executes an imbalance handling module to generate synthetic fraudulent samples using Synthetic Minority Oversampling Technique. The processor executes a model training module to train Random Forest and Extreme Gradient Boosting classifiers on balanced datasets. The system achieves fraud detection recall exceeding ninety-five percent with computational latency below one hundred milliseconds, enabling real-time fraud detection in payment processing systems. [To be published with Figure 1]

No. of Pages : 51 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131853 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-BASED SYSTEM FOR TIMED AUDITORY COGNITIVE ASSESSMENT IN HEALTHCARE

(51) International classification	:G16H 20/70, A61B 5/00, A61B 5/16, G09B 19/04, G16H 50/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Prisha Jaiswal
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6)Anupkumar Bongale

(57) Abstract :
ABSTRACT AI-BASED SYSTEM FOR TIMED AUDITORY COGNITIVE ASSESSMENT IN HEALTHCARE The present invention relates to an AI-based system (100) and method (200) for timed auditory delivery of cognitive assessment tasks in healthcare settings. The system (100) comprises an input subsystem (101) configured to receive cognitive assessment content, a processing subsystem (102) including a text-to-speech engine (102A) and a timing control module (102B) for generating synthesized speech with controlled temporal intervals, and an output subsystem (103) configured to deliver precisely paced auditory stimuli to a user (104). The method (200) includes selecting a cognitive assessment exercise (201), retrieving AI-generated timed audio (202), playing the timed audio (203), receiving user interaction commands (204), and capturing user responses (205). The invention ensures standardized, repeatable, and accessible auditory cognitive assessments while reducing dependency on manual verbal supervision. [to be published with figure 1]

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131854 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A TRIANGULAR-SLOTTED ULTRA-WIDEBAND TEXTILE ANTENNA FOR BIOMEDICAL WEARABLE APPLICATIONS

(51) International classification	:H01Q 9/04, H01Q 1/38, H01Q 13/10, H01Q 1/27, A61B 5/05
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Prof. Dr. R. K. Dwivedi
4)Prof. Dr V. K. Singh

(57) Abstract :
ABSTRACT A TRIANGULAR-SLOTTED ULTRA-WIDEBAND TEXTILE ANTENNA FOR BIOMEDICAL WEARABLE APPLICATIONS The present invention relates to a triangular-slotted ultra-wideband textile antenna (100) for biomedical wearable applications comprises a flexible textile substrate (101), a radiating patch structure (102) having triangular-shaped slots disposed on the textile substrate (101), a ground plane (103) arranged on an opposite surface of the substrate (101), and a feeding mechanism (104) coupled to the radiating patch structure (102). The antenna system (100) is operable over an ultra-wide frequency range of approximately 2.95 GHz to 24.2 GHz, enabling non-invasive microwave-based breast tissue monitoring and imaging. The flexible textile substrate (101) provides conformal integration with curved body surfaces, while the antenna configuration maintains low specific absorption rate (SAR) suitable for on-body use. The system (100) is lightweight, low-cost, and compatible with wearable healthcare and wireless body area network (WBAN) applications. [to be published with figure 1]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131199 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IPQuest – The Gamified Intellectual Property Learning System

(51) International classification	:G09B 19/00, G09B 7/00, G06Q 50/20, G09B 7/02, G09B 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Intellectual Property (IP) awareness plays a vital role in fostering creativity, innovation, and respect for original ideas. However, traditional teaching methods and existing awareness platforms often present IP concepts in highly theoretical or text-heavy formats, making them difficult for students and young learners to understand. These limitations reduce engagement, complicate complex legal concepts, and hinder practical learning. To address these challenges, this project introduces IPQuest, an interactive gaming software and mobile application designed to make IP learning both enjoyable and impactful. IPQuest presents key concepts— patents, copyrights, trademarks, and designs—through puzzles, quizzes, challenges, and problem- solving exercises that promote creativity, critical thinking, and active participation. Unlike conventional platforms, the system integrates multiple modules, including interactive quizzes with instant feedback, a reference hub linked to authentic IPR resources, and a fact explorer showcasing real- world trends and case studies. A notable feature is the AI-powered chatbot, which provides dynamic, context-aware responses to student queries, offering personalized explanations and real-time guidance beyond the capabilities of traditional static chatbots. Evaluations and comparative analyses with existing approaches indicate that IPQuest significantly enhances engagement, cognitive retention, and practical awareness, positioning it as an effective and user-friendly platform for modern IP education.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202521131252 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Portable Thermoelectric Cooling Apparatus with Integrated Power Supply

(51) International classification	:F25B21/02, H02J7/00, F25B21/02, H02J7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
A portable thermoelectric cooling apparatus is disclosed comprising an insulated inner chamber housed within an outer casing, a thermoelectric module thermally coupled to the inner chamber, and a heat sink and fan assembly for heat dissipation. An internal battery supplies power to the thermoelectric module via a switch, and an indicator light provides operational status. The apparatus incorporates a thermally insulating partition that isolates the internal power source from heat-generating components, enabling safe and efficient autonomous operation.

No. of Pages : 10 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025

(21) Application No.202521131362 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “AI-BASED ENGLISH PRONUNCIATION TRAINING SYSTEM FOR MARATHI SPEAKERS”

(51) International classification	:G09B 19/06, G09B 5/04, G09B 5/06, G09B 19/04, G
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
This invention relates to the fields of applied linguistics and computer-assisted 5 language learning, particularly to an AI-driven pronunciation training system. It combines speech processing and artificial intelligence in education to help native Marathi speakers learn Received Pronunciation (RP) English. The system lies at the intersection of speech recognition technology, language phonetics/phonology, and mobile educational software.

No. of Pages : 24 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131407 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A CLOUD-INTEGRATED GAMIFIED THERAPY AND INTELLIGENT WALKING SUPPORT SYSTEM

(51) International classification	:G06N 20/00, A61H 3/00, G16H 40/67, G16H 80/00, G16H 20/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Savithri M
9)Tiny S Palathara
10)Thomas K T
11)Vijayalakshmi S

(57) Abstract :
A cloud-integrated gamified therapy and intelligent walking support system comprising a user device (102), an API gateway (104), a serverless compute layer (106), an artificial intelligence and machine learning layer (108), a cloud storage and database layer (110), and a feedback loop (112), wherein the user device captures real-time video and navigation input, the API gateway authenticates and routes data, the serverless compute layer preprocesses data, the artificial intelligence and machine learning layer performs gesture recognition, obstacle detection, scoring, and progress analysis, the cloud storage and database layer stores user profiles and session logs, and the feedback loop delivers real-time guidance and responses to the user device. The invention enhances therapeutic engagement and mobility safety through real-time cloud intelligence. The invention facilitates scalable, secure, and personalized assistive support across multiple devices.

No. of Pages : 18 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131684 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : COMPOSITION AND PROCESS FOR PREPARING FUNCTIONAL HERBAL-FRUIT BEVERAGE

(51) International classification	:A23L 2/02, A23L 2/60, A23L 2/38, A23L 2/52, A23L 2/385
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)SUNDARDAS RAGHUNATH GORE

(57) Abstract :
ABSTRACT COMPOSITION AND PROCESS FOR PREPARING FUNCTIONAL HERBAL-FRUIT BEVERAGE A process for preparing a functional herbal-fruit beverage with enhanced bioactive retention and composition thereof is disclosed. The process comprises subjecting a mixture of fruits, vegetables, and herbs to cold vacuum infusion at temperatures not exceeding fifteen degrees Celsius and pressures of approximately two hundred millibar for thirty to sixty minutes, filtering the infused mixture, and adjusting to six to eight degrees Brix and pH three point five to four point zero with electrolytes and low-glycemic sweeteners. The process further comprises microencapsulating volatile flavor oils with gum arabic and pectin, charging with nitrogen and carbon dioxide at ratios of sixty to eighty parts nitrogen per forty to twenty parts carbon dioxide at three to four bar to achieve dissolved oxygen of two parts per million or less, and counter-pressure filling at zero to four degrees Celsius into anodized aluminum bottles with threaded necks and resealable closures. [To be published with FIG. 1]

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202521131685 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR HEAD-MOUNTED OPHTHALMIC SURGICAL TRAINING USING MULTI-SENSOR TRACKING AND HAPTIC FEEDBACK

(51) International classification	:G09B 9/00, G09B 23/28, G09B 23/30, G02B 27/01, G09B 5/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR HEAD-MOUNTED OPHTHALMIC SURGICAL TRAINING USING MULTI-SENSOR TRACKING AND HAPTIC FEEDBACK A system for ophthalmic surgical training using head-mounted mixed reality simulation is disclosed. The system comprises a processor coupled to a memory storing executable instructions. The system includes an instrument tracking module configured to process multi-sensor data from optical cameras, inertial measurement units, and magnetic position sensors to generate instrument position coordinates with spatial accuracy below 0.3 millimeters and temporal latency below 10 milliseconds. The system comprises a display rendering module configured to generate stereoscopic three-dimensional visualization on a head-mounted visor without requiring external operating microscopes. The system includes a haptic feedback module configured to generate tissue-calibrated force profiles replicating biomechanical properties of cornea, lens capsule, sclera, and vitreous body through multi-axis force-feedback actuators. The system comprises a physics simulation module executing real-time ocular tissue deformation models, an artificial intelligence complication module generating procedure-specific intraoperative scenarios. [To be published with Figure 1]

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131686 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DUAL-ENDED OPHTHALMIC SURGICAL INSTRUMENT FOR SUTURE-LESS CONJUNCTIVAL GRAFT APPOSITION

(51) International classification	:A61F 9/007, A61F 9/00, A61B 17/00, A61B 17/04, A61B 17/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT DUAL-ENDED OPHTHALMIC SURGICAL INSTRUMENT FOR SUTURE-LESS CONJUNCTIVAL GRAFT APPOSITION A dual-ended ophthalmic surgical instrument for edge-to-edge conjunctival apposition is disclosed. The instrument comprises a continuous metallic body formed without mechanical joints, a curved plate-like repositor end at a first terminus having a non-stick surface for tissue manipulation, and a bifurcated gripping end at a second terminus comprising two resilient limbs separated by a longitudinal split. Each resilient limb terminates in a blunt tip region bearing non-traumatic opposing teeth spaced at one millimeter intervals. The resilient limbs provide inherent spring resilience through elastic material deformation for temporary tissue compression. The instrument includes a forceps grip region proximate to the bifurcated gripping end and a repositor grip region proximate to the repositor end. The instrument enables suture-less graft fixation through sequential micro-zone compression simulating suture-bite fixation without tissue penetration, reducing operative time and eliminating hinge-related wear. [To be published with Figure 1]

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521131856 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Dual-Nanoparticle Loaded Mucoadhesive Buccal Film for Sustained Delivery of Zidovudine and Lamivudine

(51) International classification	:A61K9/70, A61K31/722, B82Y5/00, B82Y30/00, B82Y40/00, A61K47/38, A61K47/32, A61K47/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Dr. Smita S. Pimple

(57) Abstract :
Dual-Nanoparticle Loaded Mucoadhesive Buccal Film for Sustained Delivery of Zidovudine and Lamivudine The present invention relates to a dual-nanoparticle-loaded mucoadhesive buccal drug delivery system comprising Zidovudine and Lamivudine incorporated within a polymeric matrix of hydroxypropyl methylcellulose (HPMC K4M or K15M), polyvinylpyrrolidone K30 and propylene glycol, wherein Zidovudine-loaded and Lamivudine-loaded chitosan nanoparticles are prepared independently by ionotropic gelation using sodium tripolyphosphate, optimized through a Box–Behnken design and subsequently integrated into a film-casting dispersion to obtain a uniform buccal film laminated with an ethyl cellulose–dibutyl phthalate backing layer for unidirectional release; the optimized system demonstrates particle sizes between 140 and 360 nm, high entrapment efficiency, physiologically compatible surface pH, adequate mucoadhesion and controlled 12-hour ex-vivo permeation with compared to plain films, while maintaining mechanical integrity and drug stability for six months, thereby providing a pharmaceutically viable, patient-compliant and industrially scalable platform for sustained antiretroviral delivery through the buccal route.

No. of Pages : 30 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521131898 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAMANTANOXY-TRIAZOLE DERIVATIVES AS ANTI-CANCER AGENTS

(51) International classification	:A61P35/00, A61K31/4192, C07D249/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT ADAMANTANOXY-TRIAZOLE DERIVATIVES AS ANTI-CANCER AGENTS The present invention is related to a adamantanoxy-triazole derivatives as anti-cancer agents. The present invention particularly is also related to adamantanoxy-triazole derivatives as anti-cancer agents and process of preparation thereof. The present invention is particularly related to adamantanoxy-triazole derivatives as anti-cancer agents represented by the Formula (I). Formula (I)

No. of Pages : 28 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521131942 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN INTEGRATED IOT-ENABLED SMART WASTE COLLECTION AND MANAGEMENT SYSTEM WITH AI-POWERED REAL-TIME MONITORING, GIS-BASED ROUTE OPTIMIZATION, AND MULTI-STAKEHOLDER DIGITAL PLATFORM

(51) International classification	:G06Q 50/26, G06K 17/00, G06Q 10/04, H04L 29/08, G06Q 10/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Vaibhav Laxman Dhasal

(57) Abstract :
ABSTRACT The present invention discloses an integrated IoT-enabled smart waste collection and management system comprising a cloud-based central platform (100) with interconnected modules for GIS-based household survey, door-to-door collection monitoring, real-time vehicle tracking, AI-powered route optimization, smart bin sensor integration, user charge collection, complaint management, and biometric workforce management. The system integrates multiple IoT devices including GPS Trackers (201), RFID Readers (202), QR Code Scanners (203), Biometric Devices (204), Smart Bin Sensors (205), and Weighbridges (206) through an API Gateway (105). The Door-to-Door Collection Module (120) supports verification through QR codes, RFID, and GPS-based POI methods. The Route Optimization Module (140) employs machine learning algorithms considering multiple factors including real-time fill-level data for dynamic route adjustment. The system provides multi-stakeholder engagement through web and mobile applications for administrators, supervisors, collectors, and citizens. The invention achieves comprehensive waste management lifecycle coverage with proven results including 40% improvement in user charge collection and up to 30% reduction in operational costs through optimized collection scheduling.

No. of Pages : 24 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025

(21) Application No.202521132202 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PHARMACEUTICAL COMPOSITION AND RELATED METHODS FOR MANAGEMENT OF PAEDIATRIC IMMUNITY

(51) International classification	:A61P43/00, A61K47/10, A61K47/20, A61K47/26, A61K47/44, A61K47/38, A61K36/48, A61K36/899
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A pharmaceutical paediatric immunity composition comprising botanical mother tincture and mineral actives including alfalfa Q, avena sativa Q, ocimum sanctum Q, ginseng Q, calcarea phosphorica, hydrastis, and ferrum aceticum, along with pharmaceutically acceptable excipients. The composition comprises a controlled Smooth-Blend Integration Step (SBIS), which facilitates uniform distribution of multiple potencies within a stabilized aqueous-viscous base while preserving the functional integrity of the actives. The composition supports immune modulation, nutritional assimilation, growth and developmental support, and enhancement of mental and physical vitality in children, and is designed to improve resistance to common respiratory and gastrointestinal infections while ensuring palatability, stability, and consistent dosing suitable for paediatric administration.

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521132204 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD AND A SYSTEM FOR TRACKING OF AN ELECTRONIC DEVICE

(51) International classification	:G06F 21/57, G06F 9/445, G06F 8/61, H04L 9/32, G06F 21/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)PARVEEZ CHOUDHARI

(57) Abstract :
The present invention relates to a system (100) for tracking an electronic device using firmware-integrated secure modules. The system (100) includes a processor (202) and a memory (204) storing executable instructions that activate, during device initialization, at least one firmware-resident tracking module (FTM) embedded in a secure firmware partition, ensuring it cannot be removed through user-level actions such as factory reset or operating-system reinstallation. The system (100) generates dynamic authentication codes bound to hardware identifiers, detects tampering activities, and collects multi-source identification and positioning data including location, network identifiers, and device identity parameters. The system (100) encrypts the collected data within the secure firmware environment using an owner-verifiable cryptographic scheme, transmits the encrypted data through secure communication channels to a remote tracking server, and maintains end-to-end data integrity. Overall, the system (100) enables persistent, secure, and owner-exclusive tracking of electronic devices.

No. of Pages : 47 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521132205 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM FOR QUANTUM-INOCULATED SYMBIOTIC ENERGY GENERATION, DISTRIBUTION AND RESILIENCE

(51) International classification	:H02N2/00, H02N11/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(72)**Name of Inventor :**
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(57) Abstract :
The present invention which relates to a system(100) for quantum-inoculated symbiotic energy generation, distribution, and resilience includes a regenerative kinetic armor unit(102), a bio-chemical energy unit(110), a main computing device(116) and an energy storage unit(122). The regenerative kinetic armor unit(102) which is connected to the power grid is formed as a layered structural armor assembly shielding the power grid from potential impacts. The regenerative kinetic armor unit(102) includes a piezo-electric transducer(104), an impact-responsive metamaterial(106) and a flywheel-based rotational capture element(108). The main computing database(118) includes a quantum computing module, a post-quantum cryptography hardware security module, a quantum randomness source module and a physical veto relay module. The system(100) operates as a symbiotic energy manifold wherein mechanical damage, environmental stress, or biochemical activity are converted into usable electrical power. The bio-chemical energy unit(110) forms a distributed, self-propagating, and self-healing micro-energy mesh operating without reliance on radio-frequency communication.

No. of Pages : 25 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131687 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CORNEAL TISSUE PRESERVATION APPARATUS WITH PHASE-CHANGE THERMAL REGULATION, INTEGRATED DATA LOGGING, AND FORMALIN-FREE ANTIMICROBIAL CONDITIONING

(51) International classification	:A01N 1/02, A01N 1/00, A61F 9/00, B65D 81/38, A61F 2/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)SEEMA SUNDARDAS GORE
(72)**Name of Inventor :**
1)SUNDARDAS RAGHUNATH GORE

(57) Abstract :
ABSTRACT CORNEAL TISSUE PRESERVATION APPARATUS WITH PHASE-CHANGE THERMAL REGULATION, INTEGRATED DATA LOGGING, AND FORMALIN-FREE ANTIMICROBIAL CONDITIONING A corneal tissue preservation apparatus for maintaining viability of donor corneal tissue during storage and transport is disclosed. The apparatus comprises an insulated capsule having an inner cavity and an outer shell configured to maintain thermal stability. A phase-change material pack is disposed within the insulated capsule and maintains temperature in the range of 1 to 6 degrees Celsius for at least 72 hours without external power. A sterile vial assembly positioned within the inner cavity contains the corneal tissue immersed in preservation medium. A herbal vapor plenum integrated within the capsule emits antimicrobial vapors including neem, tulsi, and camphor. A vapor isolation barrier disposed between the plenum and the vial assembly prevents direct vapor contact with vial contents. A data logging module records temperature, humidity, and shock parameters with cryptographic hashing for tamper-proof documentation. [To be published with Figure 1]

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131688 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DUAL-LUMEN APPLICATOR DEVICE FOR SEQUENTIAL DELIVERY OF BIOCOMPATIBLE ADHESIVE COMPONENTS

(51) International classification	:A61B 17/00, A61B 17/11, A61M 31/00, A61B 17/12, A61F 2/958
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT DUAL-LUMEN APPLICATOR DEVICE FOR SEQUENTIAL DELIVERY OF BIOCOMPATIBLE ADHESIVE COMPONENTS A dual-lumen applicator device for sequential delivery of biocompatible adhesive components is disclosed. The device comprises a first fluid lumen and a second fluid lumen extending through a handle body, with first and second micro-metering mechanisms configured to dispense controlled micro-droplets. The device includes a mechanical interlock mechanism preventing simultaneous actuation of the micro-metering mechanisms, and an interval timer mechanism maintaining locking for a predetermined time interval with tactile feedback upon expiration. The device further comprises a septum structure maintaining separation between the lumens, first and second retractable cannulas in fluid communication with the respective lumens, and a micro-spreader paddle extending from the septum beyond the retracted cannula positions. The device provides sequential no-mix component delivery with integrated spreading capability, eliminating premature polymerization while enabling precise volumetric control in the range of ten to twenty-five microliters per droplet and uniform adhesive film formation through the anti-adhesive coated spreader paddle. [To be published with Figure 1]

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131689 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BIOCOMPATIBLE TISSUE ADHESIVE COMPOSITION WITH HEMOCOAGULASE-CATALYZED FIBRIN POLYMERIZATION AND DELIVERY SYSTEM

(51) International classification	:A61L 24/10, A61K 38/36, A61K 38/48, A61B 17/00, A61L 24/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)SUNDARDAS RAGHUNATH GORE

(57) Abstract :
ABSTRACT BIOCOMPATIBLE TISSUE ADHESIVE COMPOSITION WITH HEMOCOAGULASE-CATALYZED FIBRIN POLYMERIZATION AND DELIVERY SYSTEM A biocompatible tissue adhesive composition for surgical use is disclosed. The composition comprises a serum component comprising fibrinogen selected from autologous serum, homologous serum, or reconstituted lyophilized serum, and an enzyme component comprising hemocoagulase derived from Bothrops jararaca venom or a recombinant analog at concentrations ranging from zero point zero five to zero point two kilounits per milliliter in sterile saline. Upon admixture, the hemocoagulase catalyzes conversion of fibrinogen into cross-linked fibrin polymers forming a transparent bio-resorbable adhesive film within fifteen to sixty seconds. The composition optionally includes calcium chloride for accelerated polymerization. A delivery system comprises reservoirs containing each component and an applicator means enabling simultaneous or sequential delivery to tissue surfaces. The composition achieves rapid tissue bonding for ophthalmic, otorhinolaryngological, and dermatological applications while eliminating disease transmission risks through autologous formulations. [To be published with FIG. 2]

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130244 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FORMULATION FOR SKIN AND HAIR TREATMENT

(51) International classification	:A61Q 19/00, A61K 8/00, A61K 8/18, A61K 8/97, A61K 8/96, A61Q 19/08, A61K 8/92, A61K 8/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
FORMULATION FOR SKIN AND HAIR TREATMENT The present invention discloses a formulation consisting essentially of 48% avocado oil, 47% moringa oil, and 5% lavender oil. The formulation is effective for dry, irritated, and/or sensitive skin, and is stable for a period of at least 12 months.

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130246 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEVELOPMENT OF AN EVALUATION MODEL FOR INDUSTRIAL INTERNSHIP PROGRAMS

(51) International classification	:G09B 19/00, G09B 7/02, G09B 7/00, G06Q 10/06, G09B 7/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
DEVELOPMENT OF AN EVALUATION MODEL FOR INDUSTRIAL INTERNSHIP PROGRAMS ABSTRACT This invention presents a comprehensive evaluation model for industrial internship programs that addresses critical gaps in current assessment methodologies. The model employs a multi-dimensional framework assessing technical competency, professional skills, workplace integration, learning outcomes, and career readiness through validated instruments. It incorporates multi-source feedback from students, supervisors, academic mentors, and peers, synthesized through a digital platform providing real-time dashboards and analytics. The system facilitates continuous monitoring, timely interventions, and data-driven program improvements. By employing standardized yet customizable assessment rubrics, the model ensures consistency while accommodating diverse industries and disciplines. The evaluation framework tracks longitudinal development from pre-internship preparation through post-internship career outcomes, providing comprehensive insights into program effectiveness and student development.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130287 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ROADSIDE AIR PURIFICATION SYSTEM

(51) International classification	:B03C 3/017, B01D 50/00, B03C 3/41, B03C 3/40, B03C 3/155
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A roadside air purification system, comprises of a barrier body 101 configured for deployment along roads, a monitoring unit 102 integrated with the body 101 for real-time sensing of particulate matter, humidity, wind speed, temperature, and traffic conditions, a centralized processing unit operatively linked with the monitoring unit 102 for evaluating air quality and predicting dust concentrations using machine learning protocols, an ultrasonic agglomeration module arranged within or atop the body 101 for inducing coalescence of fine particles, an electrostatic precipitation module positioned downstream for capturing charged particulate matter, a bio-filtration arrangement integrated within the body 101 for removing residual particulates VOCs, and a rainwater harvesting and storage module configured to collect and supply water for self-cleaning and irrigation, ensuring efficient roadside air purification.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130290 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE TRAINING AND ASSESSMENT DEVICE

(51) International classification	:G09B 19/00, G06F 3/01, G09B 5/06, A61B 5/16, G06Q 50/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An adaptive training and assessment device comprises a kiosk 101 installed within an enclosure, a touch interactive display unit 102 mounted on the kiosk 101 coupled with a microcontroller to receive user input regarding training content, a sensing unit installed with the kiosk 101 to monitor user gaze, head orientation and facial features, an attention detection and adaptive response unit coupled with the control unit to compute an attention(t) score based on fused sensor data, a speaker unit 104 integrated within the kiosk 101 to deliver real-time audio feedback, voice-guided assistance and auditory explanations, a laser printing unit 105 integrated within the kiosk 101 to generate personalized exercise sheets, quizzes or assessments and a test paper submission and evaluation unit installed with the kiosk 101 to scan the submitted papers and generate performance summaries.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130291 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE PATHOLOGY SAMPLE COLLECTION DEVICE

(51) International classification	:A61B5/15, A61B5/151, A61B10/00, A45F3/04, G06F21/31, G06T7/00, G06V10/00, B25J15/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A portable pathology sample collection device comprises a housing 101, rollers 103 unwind straps 104 to form an adjustable carrying sling for a healthcare practitioner, an authentication unit 105 verifies authorized users, a sliding door 106 opens the housing 101 and a hinged flap 107 tilts outward to position the user's hand, a display unit 108 displays patient information, a curved slab 109 with a cylindrical member 110 dispenses a belt 111 stabilized by primary electromagnets 112 and secondary electromagnets 113, a motorized sliding unit 114 translates first articulated arm 115 and second articulated arm 116, the first articulated arm 115 positions sterile sample containers from a multi-slot compartment 118 within a first section of a multi-sectioned chamber 117, a camera 119 and projection unit 120 provide visual feedback for hand placement, a printer 121 and articulated gripper 122 with suction pad 123 apply labels to containers.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130292 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REAL-ESTATE SURVEY DEVICE

(51) International classification	:G01C 15/00, G01C 11/00, G01B 11/24, G01C 11/02, G01N 21/84
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A real-estate survey device, comprises of a housing 101, an imaging unit 102 for analysis of a property, a pair of track wheels 105 connected via a set of extendable bars 106 to extend to maintain optimal ground contact for mobility over rough or uneven land surfaces, an electronic nozzle 107 connected to a storage chamber 108 to dispense marking fluid onto the land surface while the track wheels 105 propel the housing 101 forward for continuous, precise marking during traversal of the selected property, an evaluation module to extract property metrics, an inspection unit to validate documents provided by the property owner, a microphone 104 for initiating inspection, evaluation, and marking operations, a plurality of L-shaped extendable legs 115 to position a tri-wheel assembly 116 for mobility across staircases and multi-level building structures for inspection and verification.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202521130293 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WASTE PAPER RECYCLING AND COMPOSITE SHEET MANUFACTURING SYSTEM

(51) International classification	:D21B 1/32, D21B 1/34, D21B 1/06, D21B 1/02, D21C 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A waste paper recycling and composite sheet manufacturing system, comprising of a feeding and conveying unit installed within an enclosure 101 and comprising a hopper 102 to receive mixed waste paper, a conveyor belt 103 transports waste paper through successive processing stages, a sorting arrangement 104 classify waste paper and divert paper sheets, a shredding arrangement shred each paper type into uniform particles, a pulping unit mix paper with water and chemicals to form a fibrous pulp, a de-inking and cleaning unit remove ink, adhesives, dust, and solid impurities from pulp, a blending arrangement to mix the cleaned pulp with application-specific additives via mixing units 115, a sheet-forming unit form wet sheets, a pressing and densification unit compress sheets, a surface treatment and shaping unit apply coatings, perform perforation, and trim sheets, a quality inspection detects defects, moisture deviation, density inconsistency, delamination, and fire-retardant compliance.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202521130297 A
(19) INDIA
(22) Date of filing of Application :22/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : IMMUNIZATION SYSTEM FOR ADMINISTERING POLIO DOSAGE TO CHILDREN

(51) International classification	:A61J 7/04, A61J 1/03, A61J 7/00, G09B 19/00, A61J 3/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An immunization system for administering polio dosage to children comprising a movable body 101 having motorized wheels 102 with a speed sensor to enable controlled movement over surface, an artificial intelligence camera 103 with a near-infrared sensor to detect and analyze facial expressions, verify child's identity, and determine readiness for dosage, a pair of C-shaped hinged plates 104 provided on horizontal expandable rods 105 to stabilize child during dosage, an electronically controlled nozzle 107 connected to each section of a multi-sectioned chamber 108, to dispense a predetermined dosage in child's mouth, an articulated arm 110 to manipulate nozzle, a marker pen 111 with an articulated linkage 112 to mark child's fingernail, a printer module 113 to issue a receipt after successful dosage, a GPS module configured to track real-time location of body 101 and IoT module to connect body 101 to a remote database storing child, family, and village information.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131690 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE CRYOGENIC PRESERVATION CAPSULE AND METHOD OF PRESERVING BY WAY OF PORTABLE CRYOGENIC PRESERVATION CAPSULE

(51) International classification	:A01N 1/02, A61F 9/00, F25D 3/08, F25D 3/10, A61F 9/007
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT PORTABLE CRYOGENIC PRESERVATION CAPSULE AND METHOD OF PRESERVING BY WAY OF PORTABLE CRYOGENIC PRESERVATION CAPSULE Disclosed is a portable cryogenic preservation capsule (100) for formalin-free5 preservation of biological tissues or a cadaver. The capsule (100) includes a housing assembly (102) defining a sealed preservation chamber (110) lined by an inner containment liner (108) and thermally isolated by an insulation layer (106). A primary cooling stage (118) maintains the chamber (110) at −20 °C to −30 °C, while a secondary cryogenic stage (126) including a phase-change material sleeve (128) and a10 refillable cryogenic micro-cartridge (130) enables deep-freeze preservation at −40 °C to −60 °C. Odor-conditioning and venting (132), sterilization (136), sensor and traceability (144), controlled reconditioning (148), power (154), and hermetic fluid management (155) sub-systems ensure safe, portable, and compliant preservation. The present disclosure also relates to a method (200) for formalin-free cryogenic15 preservation of biological tissues or a cadaver by way of a portable cryogenic preservation capsule (100). Figure 1 will be the reference.

No. of Pages : 44 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131691 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : OPHTHALMIC SURGICAL TRAINING APPARATUS WITH DUAL-AXIS POSITIONING ASSEMBLY AND ORBITAL PLANE PRESERVATION SYSTEM

(51) International classification	:G09B 23/30, G09B 23/28, G09B 23/32, G09B 23/34, G09B 9/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(57) Abstract :
ABSTRACT OPHTHALMIC SURGICAL TRAINING APPARATUS WITH DUAL-AXIS POSITIONING ASSEMBLY AND ORBITAL PLANE PRESERVATION SYSTEM An ophthalmic surgical training apparatus for simulating human anatomical positioning during microsurgical procedures is disclosed. The apparatus comprises a head structure with orbital cavities, a neck structure, a mounting base, and a dual-axis positioning assembly. The dual-axis positioning assembly comprises a ball-and-socket joint enabling angular displacement and a vertical translation mechanism providing linear height adjustment. The ball-and-socket joint and vertical translation mechanism cooperate to maintain an orbital plane at horizontal orientation independent of head angular position. The apparatus includes bilateral orbital mounts with quick-release coupling mechanisms comprising magnetic and bayonet locking elements enabling tool-free eyeball module exchange within ten seconds. A position-retention device resists unintended head movement during surgical manipulation. The apparatus provides reduced setup time and enhanced training realism through preserved orbital plane alignment and rapid specimen exchange capability for ophthalmic surgical training applications. [To be published with Figure 1]

No. of Pages : 35 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131692 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : THERAPEUTIC HANDS-FREE MOBILE SUPPORT APPARATUS FOR MAINTAINING NEUTRAL CERVICAL POSTURE

(51) International classification	:A61H 1/02, A61F 5/01, A61F 5/055, A61F 5/042, A61H 3/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT THERAPEUTIC HANDS-FREE MOBILE SUPPORT APPARATUS FOR MAINTAINING NEUTRAL CERVICAL POSTURE A therapeutic hands-free mobile support apparatus for maintaining neutral cervical posture during digital device use is disclosed. The apparatus comprises a pose-maintaining arm having an internal spring spine, a helical support coil surrounding the spring spine, a viscoelastic damping filler disposed between the spine and coil, and an elastomeric jacket encasing the assembly. The apparatus further includes an anchoring assembly mechanically coupled to the pose-maintaining arm for attachment to support surfaces, a device cradle operatively mounted at the distal end of the arm, and resilient gripping members configured to secure a mobile device. A magnetic retention mechanism provides calibrated retention force and releases upon exceeding a predetermined shear force threshold to prevent entanglement. A distance-limiting member enforces minimum viewing distance between the device and user eyes. [To be published with Figure 1]

No. of Pages : 44 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202521131411 A
(19) INDIA
(22) Date of filing of Application :24/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : REIMAGINED LABOR COT

(51) International classification	:A61G7/16, A61G13/02, A61G13/10, A61G15/02, A61G15/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT REIMAGINED LABOR COT The present invention relates to a reimagine labor cot (100) for use during childbirth is disclosed. The labor cot (100) comprises a base frame (101) adapted to rest on a floor surface and supported by a plurality of castor wheels (102) provided with braking means (103). A convertible support structure (104) is mounted on the base frame (101) and comprises interconnected body sections (105, 106, 107) movable between a bed configuration and a chair configuration. The body sections include a first body section (105) for supporting an upper torso of a mother, a second body section (106) for supporting a pelvic region and defining a delivery clearance region (108), and a third body section (107) configured to support lower limbs and being selectively extendable. The labor cot (100) further includes a manual adjustment mechanism (109), a sliding and locking mechanism (110), detachable mattress segments (111a–111c), and removable support accessories (112) including leg crutches (113), leg supports (114), hand support, and side handles. [to be published with figure 1]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131442 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A RESVERATROL-LOADED LIPID POLYMER HYBRID NANOCARRIER SYSTEM AND A METHOD THEREOF FOR TARGETED AND SUSTAINED TREATMENT OF GLIOBLASTOMA MULTIFORME

(51) International classification	:B82Y5/00, B82Y30/00, A61K9/51, A61K9/56, A61K31/05, A61K9/1277, A61K9/178, A61P35/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT The present invention relates to a lipid polymer hybrid nanocarrier system encapsulating resveratrol for targeted delivery and sustained release in the treatment of glioblastoma multiforme. The invention provides a nanocarrier comprising a lipid matrix, a polymeric stabilizing layer, and a surfactant system optimized through a statistical design approach to achieve enhanced encapsulation efficiency, controlled particle size, and stable surface charge. The nanocarrier is capable of crossing the blood–brain barrier and exhibits improved cellular uptake, prolonged drug release, and enhanced cytotoxic activity against glioblastoma cells compared to free resveratrol. The invention further discloses a method for preparing the nanocarrier and a method for treating glioblastoma multiforme using the said nanocarrier system.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131472 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SPOROACTAL MEDIUM AND METHOD FOR MASS MULTIPLICATION OF BIOCONTROL FUNGI

(51) International classification	:A01N 63/30, C12N 1/14, A01P 3/00, C12R 1/645, A01N 63/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to the field of agricultural biotechnology, specifically to culture media and processes for cultivating biocontrol fungi at scale. More particularly, it concerns a novel nutrient medium (hereinafter referred to as Sporoactal) and an improved method for the mass multiplication of biocontrol fungi used in plant disease and pest management. This invention lies at the intersection 10 of microbiology and sustainable agriculture, providing a cost-effective solution for producing large quantities of beneficial fungal inoculum for use as biopesticides and biofertilizers.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2025
(21) Application No.202521131485 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HEALTH MONITORING SHEET FOR ABSORBENT HYGIENE PRODUCT AND METHOD FOR MANUFACTURING THE SHEET

(51) International classification	:A61B5/00, A61B5/145, A61F5/44, A61F13/15, A61F13/84, G01N33/50, G01N33/52, G01N33/493
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(57) Abstract :
ABSTRACT HEALTH MONITORING SHEET FOR ABSORBENT HYGIENE PRODUCT AND METHOD FOR MANUFACTURING THE SHEET The present disclosure provides a health monitoring sheet (100) for an absorbent hygiene product, and a method (1000) for manufacturing the health monitoring sheet. The health monitoring sheet comprises multiple functional layers configured to intercept bodily fluid, control its flow through microfluidic channels, and generate a stable colorimetric response corresponding to the biomarkers. The sheet is configured to be removably positioned between a top sheet (101) and a super-absorbent polymer layer (112) of an absorbent hygiene product such as a diaper, sanitary pad, or wound dressing. The disclosure further provides a manufacturing method suitable for scalable production. The disclosure yet further provides a health monitoring kit including the sheet, an absorbent hygiene product, a reference color chart, and user instructions for result interpretation.

No. of Pages : 41 No. of Claims : 26

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131693 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MODULAR LACRIMAL SURGERY TRAINING SYSTEM WITH DUAL-ACCESS SURGICAL PATHWAYS

(51) International classification	:G09B 23/28, G09B 23/30, G09B 23/32, A61F 9/007, G09B 9/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT MODULAR LACRIMAL SURGERY TRAINING SYSTEM WITH DUAL-ACCESS SURGICAL PATHWAYS A modular lacrimal surgery training system for teaching dacryocystorhinostomy procedures is disclosed. The system comprises a reusable head-frame and a replaceable lacrimal-nasal module removably coupled thereto. The replaceable module comprises simulated skin, bone of the lacrimal fossa, lacrimal sac, canaliculi, nasolacrimal duct, and nasal cavity structures. The module is configured to enable both transcutaneous external access and transnasal endoscopic access within the same physical module. The system includes an irrigation channel extending from the canaliculi through the lacrimal sac and duct to the nasal cavity for patency assessment. The system includes a probing and intubation pathway dimensioned for standard surgical instruments including probes and intubation tubes. The bone portion permits drilling to create an osteotomy window, and the lacrimal sac accepts mucosal flap creation and anastomosis formation. [To be published with Figure 1]

No. of Pages : 38 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131694 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE OCULAR-TISSUE PRESERVATION APPARATUS WITH PHASE-CHANGE THERMAL STABILIZATION AND INTEGRATED STERILIZATION

(51) International classification	:A01N 1/02, A61F 9/00, A61L 2/20, A01N 3/00, A01N 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT PORTABLE OCULAR-TISSUE PRESERVATION APPARATUS WITH PHASE-CHANGE THERMAL STABILIZATION AND INTEGRATED STERILIZATION A portable ocular-tissue preservation apparatus for maintaining donor ocular tissues during transport is disclosed. The apparatus comprises an insulated housing, a phase-change thermal pack disposed within the housing and configured to maintain internal temperature between 1 degree Celsius and 6 degrees Celsius for at least eight hours without external power, and a multi-chamber cassette positioned within the housing for segregated storage of different tissue types. The apparatus further includes a vapor conditioning cartridge that emits controlled herbal vapors at camphor concentration between 2 and 10 parts per million for odor control, a sterilization module comprising an ultraviolet-C light emitting diode array that delivers surface dose between 20 and 40 millijoules per square centimeter, and an electronic logger that records temperature, humidity, and shock events with tamper-evident cryptographic protection. [To be published with Figure 1]

No. of Pages : 44 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131695 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PRESERVED SCLERAL BIOMATERIAL KIT SYSTEM FOR SURGICAL RECONSTRUCTION

(51) International classification	:A61L 27/36, A61L 27/38, A01N 1/02, A61L 27/24, A61F 2/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT PRESERVED SCLERAL BIOMATERIAL KIT SYSTEM FOR SURGICAL RECONSTRUCTION A sterile biomaterial kit system for surgical reconstruction is disclosed. The system comprises a preserved scleral biomaterial graft comprising decellularized collagen-rich tissue with residual deoxyribonucleic acid below detectable cellular levels, a cross-linking matrix incorporated within the graft providing structural stabilization, and a lyophilized structure having reduced moisture content for ambient shelf stability. The system further includes sterile barrier packaging with multi-layer pouch configuration, inert gas environment, and desiccant component, along with a rehydration solution composition provided separately within the packaging. The graft exhibits tunable bending stiffness ranging from 0.3 to 2.0 Newton-millimeter and tensile strength from 5 to 30 megapascals. The cross-linking matrix is formed from genipin, glyceraldehyde, or ultraviolet-activated riboflavin. [To be published with Figure 1]

No. of Pages : 42 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131696 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR BLOCKCHAIN-SECURED REAL-TIME MONITORING OF BIOMEDICAL PRESERVATION PARAMETERS USING IoT SENSOR NETWORKS

(51) International classification	:H04W 4/38, G16H 40/67, H04L 9/06, H04L 9/32, H04W 4/029
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR BLOCKCHAIN-SECURED REAL-TIME MONITORING OF BIOMEDICAL PRESERVATION PARAMETERS USING IoT SENSOR NETWORKS A computer-implemented system for real-time blockchain-secured monitoring and traceability of biomedical preservation parameters is disclosed. The system comprises a memory and a processor coupled to the memory, wherein the processor is configured to execute programmed instructions for collecting environmental preservation data comprising temperature readings, humidity levels, pressure measurements, vibration metrics, and geolocation coordinates from a plurality of smart preservation nodes monitoring donated biological tissues. The processor analyzes the environmental preservation data against predefined safety parameters to identify deviations, generates automated notifications to authorized personnel upon threshold violation detection, receives operator credential verification through biometric or token-based authentication mechanisms, and records verified preservation events as timestamped blocks on the distributed ledger system. The system provides immutable audit trails for regulatory compliance and ethical traceability of donation workflows. [To be published with Figure 1]

No. of Pages : 62 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131697 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTEGRATED OPHTHALMIC SURGICAL TABLE-CHAIR SYSTEM WITH PIVOTING SURGEON SEAT ASSEMBLY

(51) International classification	:A61G 13/12, A61G 15/10, A61G 15/12, A61G 15/00, A61G 13/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT INTEGRATED OPHTHALMIC SURGICAL TABLE-CHAIR SYSTEM WITH PIVOTING SURGEON SEAT ASSEMBLY An integrated ophthalmic surgical table-chair system for performing microsurgical procedures on a patient is disclosed. The system comprises a surgical table assembly having independently adjustable sections and a head support region. The system includes a circular column fixedly mounted below the head support region, defining a longitudinal pivot axis. An inverted U-shaped column has a first leg pivotally coupled to the circular column through a bearing assembly, enabling rotation about the pivot axis. A ground engagement assembly with wheels is attached to a second leg of the inverted U-shaped column and translates along a floor surface as the column rotates. A surgeon seat is mounted on the inverted U-shaped column and moves through an arc around the patient's head. A locking mechanism selectively prevents rotational movement. [To be published with Figure 1]

No. of Pages : 60 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131698 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTEGRATED AIR-MANAGEMENT APPARATUS WITH MULTI-STAGE FILTRATION, THERMAL CONTROL, AND HERBAL VAPOR SYSTEM FOR SURGICAL ENVIRONMENTS

(51) International classification	:F24F 3/16, B01D 46/00, F24F 3/14, A61L 9/20, A61L 9/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT INTEGRATED AIR-MANAGEMENT APPARATUS WITH MULTI-STAGE FILTRATION, THERMAL CONTROL, AND HERBAL VAPOR SYSTEM FOR SURGICAL ENVIRONMENTS An integrated air-management apparatus for maintaining sterile environmental conditions in surgical spaces is disclosed. The apparatus comprises a housing structure with an air inlet and air outlet, a multi-stage filtration cascade disposed within the housing including prefilter, fine filter, activated carbon adsorption, germicidal sterilization, and HEPA filter stages arranged in sequential fluid communication. The apparatus further includes a thermal regulation module controlling air temperature, a humidity control module maintaining relative humidity within predetermined range, and a positive-pressure blower assembly generating pressure differential between surgical space interior and exterior environment. A pressure control system regulates blower operation based on differential pressure sensor feedback. The apparatus includes a herbal vapor plenum infusing aromatic botanical vapors, an air diffuser distributing filtered air in controlled flow pattern, and a monitoring control unit with environmental sensors providing data logging and multi-mode operation. [To be published with Figure 1]

No. of Pages : 40 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025

(21) Application No.202521131699 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SURGICAL MASK APPARATUS WITH ANTI-FOG AIRFLOW REDIRECTION SYSTEM

(51) International classification	:A62B 18/08, A62B 18/02, A61M 16/06, A41D 13/11, A62B 23/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT SURGICAL MASK APPARATUS WITH ANTI-FOG AIRFLOW REDIRECTION SYSTEM A surgical mask apparatus for preventing fogging of optical devices during medical procedures is disclosed. The apparatus comprises a mask body configured to cover a nose and mouth region, a nasal sealing member coupled to an upper portion of the mask body and forming a seal against a nasal bridge area, a pair of cheek manifolds integrated within the mask body defining internal air channels, and a pair of diffuser outlets positioned at lateral-lower regions and oriented at angles of approximately 30 to 45 degrees below horizontal. The nasal sealing member comprises soft silicone having Shore A hardness of approximately 20 to 40. The diffuser outlets redirect exhaled air in a downward-lateral direction away from optical devices. A removable filter cassette having a filter frame, nanofibre filter media, and compressible gasket provides filtration and enables repeated sterilization. [To be published with Figure 2]
No. of Pages : 40 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131700 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AIR STERILIZATION APPARATUS WITH OPTICAL ISOLATION FOR HEALTHCARE ENVIRONMENTS

(51) International classification	:A61L 9/20, B01D 46/00, F24F 3/16, A61L 9/16, F24F 8/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)SUNDARDAS RAGHUNATH GORE

(57) Abstract :
ABSTRACT AIR STERILIZATION APPARATUS WITH OPTICAL ISOLATION FOR HEALTHCARE ENVIRONMENTS An air sterilization apparatus for healthcare environments is disclosed. The apparatus comprises a housing structure with a composite filtration assembly having a High Efficiency Particulate Air filter element followed by an activated carbon absorber element positioned downstream. The apparatus comprises a herbal vapor conditioning plenum containing botanical extracts positioned downstream of the filtration assembly. An optical isolation barrier having a labyrinth baffle structure with offset baffle plates creates a serpentine air passage preventing line-of-sight optical transmission while permitting air flow. An ultraviolet germicidal chamber positioned downstream of the optical isolation barrier delivers terminal sterilization at 254 nanometer wavelength with dose of 20 to 40 millijoules per square centimeter. An external odor mitigation element comprising carbon scrubbing material is disposed on the housing exterior adjacent to the herbal plenum. [To be published with Figure 1]

No. of Pages : 46 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131701 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED OCULAR-TISSUE AUTO-PROCESSING UNIT AND METHOD OF AUTOMATED PRE-PRESERVATION HANDLING OF DONOR OCULAR TISSUE

(51) International classification	:A01N 1/02, A61F 9/007, A61L 2/10, A61L 2/20, A61F 9/00	(71)**Name of Applicant :** **1)SUNDARDAS RAGHUNATH GORE** Address of Applicant :Sunder Netralaya, Super speciality eye clinic , Chaupati karanja Ahilyanagar, Ahmadnagar 414001, Maharashtra, India Ahmadnagar Maharashtra India **2)SEEMA SUNDARDAS GORE**
(31) Priority Document No	:NA	(72)**Name of Inventor :**
(32) Priority Date	:NA	**1)SUNDARDAS RAGHUNATH GORE**
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
ABSTRACT AUTOMATED OCULAR-TISSUE AUTO-PROCESSING UNIT AND METHOD OF AUTOMATED PRE-PRESERVATION HANDLING OF DONOR OCULAR TISSUE Disclosed is an automated ocular-tissue auto-processing unit (100) for pre-preservation handling of donor ocular tissue is disclosed. The unit includes a sealed processing chamber (102) housing transparent tissue cassettes (104a, 104b) with medical-grade lids (106), a HEPA-filtered venting plenum (108), an oscillatory actuation mechanism (110), a fluid management sub-system (114) with peristaltic pumps, and a sterilization sub-system (120) incorporating herbal vapor generation and ultraviolet-C irradiation. A sensor array (128) and controller (130) cooperatively enable real-time monitoring and closed-loop control to execute sequential sterile wash, antimicrobial perfusion, combined herbal vapor and UV-C sterilization, and isotonic conditioning stages. A sterile transfer interface (140) permits downstream transfer without environmental exposure, enabling standardized, contamination-controlled ocular tissue preparation prior to preservation. The present disclosure also relates to a method (200) for pre-preservation handling of donor ocular tissue by way of automated ocular-tissue auto-processing unit (100). Figure 1 will be the reference.

No. of Pages : 41 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202523130040 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DIGITIZATION MODULE FOR MICROSCOPES

(51) International classification	:G02B21/24, G02B21/26, G02B21/00, G02B21/02, G02B21/04	(71)**Name of Applicant :** **1)Medprime Technologies Private Limited** Address of Applicant :2nd Floor, Plot no. A-246, Road no. 30-B, Wagle Estate, Thane, Maharashtra 400604 Thane Maharashtra India
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(32) Priority Date	:NA	**1)Samrat**
(33) Name of priority country	:NA	**2)Sathyamoorthy G**
(86) International Application No Filing Date	: :01/01/1900	**3)Binil Jacob** **4)Greeshma Unnikrishnan**
(87) International Publication No	: NA	**5)Aryaman Singh**
(61) Patent of Addition to Application Number Filed on	:202021048690 :01/01/1900	**6)Mahesh Kumar Rathor**
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
Disclosed herein is an improved digitization module [200] for microscopes, configured to upgrade conventional microscopes into advanced digital systems. The module [200] replaces or integrates with monocular, binocular, trinocular, or multiport microscope heads, offering enhanced functionality and adaptability. The module [200] integrates an optical system ensuring precise focus and maintaining the field of view identical to that observed through microscope eyepieces. The mechanical system features a 360-degree rotational mechanism, enabling smooth and independent rotation of the module without moving the microscope body. A universal smart device holder [12] accommodates a wide range of smart devices, ensuring proper alignment and stability for imaging.

No. of Pages : 33 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025
(21) Application No.202521130298 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CHILD MONITORING AND CARE DEVICE FOR KINDERGARTEN

(51) International classification	:A61B 5/00, A61B 5/0205, A61B 5/11, G08B 21/02, G09B 19/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A child monitoring and care device for kindergarten, comprising a body 101 developed to be positioned within a kindergarten environment, a mobility unit 102 configured with the body 101 to enable smooth, precise, and autonomous navigation throughout the environment, an inspecting module coupled with a gear and gear train unit 103, configured to dynamically assess children's posture, attentiveness, emotional states, and behavioral patterns, multiple wearable wristbands 105 is stored inside a chamber 106, each wristband 105 embedded with a monitoring unit for tracking children's vital signs, physical activity, and correct wristband 105 placement, a multimedia interaction unit 108 provides interactive audio-visual engagement by playing educational content, stories, and sounds, the multimedia interaction unit 108 includes a speaker unit 108a playing educational and engagement content, and a holographic projection unit 108b for displaying images, scenarios, or parent-related content to soothe children experiencing distress or separation anxiety.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025

(21) Application No.202521132034 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Smart Assist Stick for Physically Challenged Peoples

(51) International classification	:G01S15/93, H04W4/14, A61H3/06, G08B25/01, G08B21/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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6)Kaushal sharma
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8)Manish Panchal

(57) Abstract :
A smart assistive walking stick integrates an Arduino Nano microcontroller with ultrasonic distance sensors, together with output modules (buzzer, and voice guidance) for multimodal alerts. Obstacles are detected in real time by the ultrasonic sensors, and upon detection within a threshold range, the system emits an audible alarm, and spoken prompts to warn the use. An SOS button permits the user to send an emergency alert to preconfigured contact. An RF transceiver arrangement allows a remote control to make the stick emit a buzzer signal for easy recovery when lost . These features together promote enhanced navigational safety and independence for visually impaired individuals.

No. of Pages : 30 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/12/2025
(21) Application No.202521132064 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT-BASED AUTOMATED STUDENT ATTENDANCE SYSTEM USING BLE BEACONS AND FACIAL RECOGNITION

(51) International classification	:H04W 4/80, G06Q 50/20, G07C 1/10, G06K 9/00, H04W 4/021
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Dr. Dheeraj Dubey
6)Dr. Shubham Shukla
7)Subhash Yadav
8)Rahul Haripriya

(57) Abstract :
ABSTRACT IOT-BASED AUTOMATED STUDENT ATTENDANCE SYSTEM USING BLE BEACONS AND FACIAL RECOGNITION The present invention relates to educational technology systems for automated attendance tracking. Traditional attendance methods are prone to errors, time inefficiencies, and proxy marking. The disclosed system overcomes these limitations by integrating Bluetooth Low Energy (BLE) beacon geofencing with facial recognition and liveness verification. BLE beacons establish precise classroom boundaries, while a teacher portal initiates attendance sessions linked to beacon identifiers. A student application activates only when both beacon presence and session initiation are detected, prompting the smartphone camera to capture short video sequences with random liveness challenges. Captured data is processed through a cloud-based facial recognition engine, matched against pre-registered student profiles, and stored with timestamp, location, and confidence scores in a secure database. The system provides real-time dashboards for teachers and automated reporting for administrators. Applications include schools, universities, corporate training, government monitoring, and healthcare attendance verification.

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025
(21) Application No.202521131702 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REMOTE MOBILE OPERATION THEATRE SYSTEM AND METHOD FOR OPERATING A REMOTE MOBILE OPERATION THEATRE SYSTEM

(51) International classification	:A61G 3/00, A61G 1/04, A61B 50/13, A61G 1/00, A61G 1/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)SEEMA SUNDARDAS GORE
(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT REMOTE MOBILE OPERATION THEATRE SYSTEM AND METHOD FOR OPERATING A REMOTE MOBILE OPERATION THEATRE SYSTEM Disclosed is a remote mobile operation theatre system (100) integrated within a transport vehicle (101). The system (100) includes a sealed operation pod (102) supporting a stretcher (104) and enabling surgical procedures during stationary or transit conditions. An adaptive vibration isolation subsystem (106A–106N) with pneumatically actuated stabilizers dynamically mitigates multi-axis vehicle-induced vibrations based on real-time inertial sensing and predictive analysis by an inertial sensing and prediction device (108). Magnetically responsive tool retention (110), equipment stabilization and calibration subsystems (112A-112N), and coordinated sterile airflow orchestration (114) with exhaust regulation (116) maintain surgical precision and a positive-pressure sterile environment. A controller (122) orchestrates sensing, vibration anticipation, tool stabilization, equipment recalibration, airflow management, and sterilization to enable safe, sterile, vibration-tolerant mobile surgical procedures. The present disclosure also relates to a method (200) for operating a remote mobile operation theatre system (100) integrated within a transport vehicle (101). Figure 1 will be the reference.

No. of Pages : 41 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/01/2026

(21) Application No.202621002223 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "Herbal–Mineral Fusion Tooth Powder with Bio-Activated Alkaloid Release System and Salivary-Triggered Antimicrobial Boost"

(51) International classification	:A61Q 11/00, A61K 8/97, A61K 8/19, A61K 36/61, A61K 8/25
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dinesh Sheshrao Kharate
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4)Bankat Sangram Kamble
5)Subhash Bhama Pawar

(57) Abstract :
The invention relates to an herbal–mineral dentifrice composition formulated to deliver enhanced oral hygiene benefits through a bio-activated, saliva-responsive release system. The composition comprises 20–40% herbal bioactive powder selected from neem, babool, peelu, triphala, clove, and liquorice; 25–45% micro-mineral carrier matrix including bentonite clay and calcium carbonate; and a salivary-activated release enhancer formed from polyphenol-rich microgranules. The mineral matrix stabilizes moisture-sensitive herbal actives and enables controlled alkaloid and polyphenol release upon contact with saliva. Optional functional agents such as nano-charcoal, rock salt, and pudina-based cooling microgranules may be incorporated to provide supplementary cleansing, abrasiveness, and sensory effects. The invention offers synergistic herbal–mineral interactions, improved stability of natural actives, and a saliva triggered antimicrobial and freshness boost during brushing.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/12/2025

(21) Application No.202524130378 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Compact Composter Assembly

(51) International classification	:C05F9/02, C05F9/00, C05F17/00, C05F17/964, C05F17/993, B09B3/35, B09B101/70
(31) Priority Document No	:19/088,926
(32) Priority Date	:24/03/2025
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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3)Saya C Patil

(57) Abstract :
A compact composter assembly that allows in-home composting in a simple manner is described. It provides simplified mechanism to shred the organic input material to optimal size, manage excess humidity, aerate the shredded material and mix with existing composting batch and new culture. An integrated sieve to support material pile during composting and an inbuilt tray to remove the collected compost is also described. A method to control humidity and monitor environmental parameters within the assembly are also shown.

No. of Pages : 14 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/01/2026

(21) Application No.202621000677 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A High Accuracy GPS Disciplined Elapsed Time and Time Interval Calibrator with Forward, Reverse and Offset Modes

(51) International classification	:G04R 20/02, G01S 19/23, G04R 20/00, G04F 10/00, G04R 20/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Ramesh Vasant Kharad

(57) Abstract :
The present invention relates to a high-precision GPS disciplined elapsed time and time interval calibrator capable of measuring, generating, and calibrating elapsed time with microsecond-level resolution and long-term stability. The system comprises a Global Navigation Satellite System (GNSS) receiver providing a one-pulse-per-second (1PPS) reference signal synchronized to Coordinated Universal Time (UTC), an oven-controlled crystal oscillator (OCXO) disciplined by the GNSS 1PPS signal, a microcontroller for high-resolution time counting, and a graphical display module for real-time visualization. The calibrator supports multiple operating modes, including forward elapsed time, reverse elapsed time, and user-configurable offset mode, enabling compensation for system delays and calibration alignment. The device further provides outputs including 1PPS, 10 MHz reference, and digital communication interfaces for data logging and export. The invention is suitable for calibration laboratories, ISO/IEC 17025 accredited facilities, testing laboratories, and industrial timing applications, offering accuracy better than ±0.5 ppm and synchronization with GNSS-derived UTC.

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/07/2024
(21) Application No.202441040180 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR DETERMINING VASCULAR HEALTH AND VASCULAR AGEING INDEX

(51) International classification	:A61B5/00, A61B5/145, A61B5/11, A61B5/0536, A61B5/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Singhal, Vatsal
3)Tayal, Shivani

(57) Abstract :
A smart wearable device 100 to determine vascular health and vascular ageing index of a user is described. The smart wearable device 100 includes a PPG sensor 202, an accelerometer 204, hydration sensor 206, and temperature sensor 208 to acquire physiological and contextual data of the user. A processing unit 210 filters the PPG waveform using the motion data, hydration level, temperature data, and circadian rhythm to generate a filtered waveform. From this, morphological and temporal features are extracted. Behavioral and physiological modulators, such as sleep-stress score and VO_2 max-based cardio age, are also computed. These inputs form a multi-parametric feature set used by a machine learning model to generate a vascular ageing index. [To be published with Fig. 2]
No. of Pages : 43 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/08/2024
(21) Application No.202441046567 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MODULAR TINKERING KIT AND ASSESSMENT SYSTEM FOR EVALUATING USER'S CREATIVITY THROUGH PRODUCT PROTOTYPES

(51) International classification	:G09B0019000000, A61N0001360000, A63H0033100000, A61B0005000000, B22D0019100000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Saurav Chakraborty

(57) Abstract :
MODULAR TINKERING KIT AND ASSESSMENT SYSTEM FOR EVALUATING USER'S CREATIVITY THROUGH PRODUCT PROTOTYPES The invention discloses an assessment system (700) integrated with a modular tinkering kit (50) for evaluating creativity of a user through prototype construction. The system includes an input unit (710) configured to receive multimodal submission data including images, annotations, reflections, or video of a prototype (702), and a control unit (730) having modules for prompt generation (730a), preprocessing (730c), feature extraction (730d) using slot geometries and grid markers, structurization (730e), assessment (730f) to compute creativity scores across originality, flexibility, elaboration, fluency and problem sensitivity, and benchmarking and feedback (730g, 730h) for comparative analysis and growth suggestions. An output unit (735) delivers assessment results and a creativity profile of the user. The modular kit (50) includes connectors (10), slotties (20), mounting connectors (25), electronics (30) and sensors (35) to build interactive prototypes, enabling structured, automated and scalable evaluation of creativity with percentile ranking. (FIG. 7 for Publication)

No. of Pages : 68 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202441047869 A
(19) INDIA
(22) Date of filing of Application :21/07/2024
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE-BASED BEHAVIORAL PROFILING FOR EVALUATING USER MORNING ALERTNESS

(51) International classification	:A61B5/024, A61B5/0205, A61B5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Kumar, Mohit
2)Singhal, Vatsal
3)Bhattacharya, Aditi

(57) Abstract :
A method and system for determining morning alertness by leveraging the science of sleep inertia. The method includes detecting sleep end time, monitoring heart rate and activity data post sleep end time. The method further includes calculating the active time based on the activity data of the user. Further, the method includes determining sleep inertia based on the sleep end time and the active time. The method further includes calculating a morning alertness score based on the sleep inertia. The morning alertness score is calculated by analysing the sleep inertia and activity data by a ML model. The morning alertness score offers insights into sleep effectiveness and psychological markers such as motivation. (To be published with Fig. 2)

No. of Pages : 17 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/07/2024
(21) Application No.202441052527 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LIPID EXTRACTION FROM INSECTS

(51) International classification :C11B1/10, C11B11/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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3)PATEL RAJAN HARSHADBHAI
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5)ANKIT ALOK BAGARIA

(57) Abstract :
Aspects of the present disclosure are directed to lipid extraction from insects. According to an aspect of the present disclosure, a method for extracting lipids includes preparing an insect biomass from dried insects (e.g., by grinding them into a powder), incubating the powder with a green solvent under suitable extraction conditions to form a lipid-containing solution and a defatted biomass, separating the lipid-containing solution from the defatted biomass, and removing the solvent to recover the lipid product. The disclosure further includes a composition containing the lipid product obtained by this method, and using the composition as an anti-foaming agent in fermentation or bioprocessing media. In another embodiment, the method also includes adding a non-polar solvent to the lipid-containing solution, adding ice-cold acetone to precipitate phospholipids, and separating the phospholipid precipitate. According to another aspect, the composition containing the phospholipids can be used in nutraceutical, food-grade, pharmaceutical-grade, or cosmetic-grade applications.

No. of Pages : 41 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/03/2025
(21) Application No.202441066478 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An agricultural weeder device with removable grass cutter for improved performance

(51) International classification	:A01B39/18, A01M21/02, A01D34/00, A01D34/73, A01D34/82, A01D75/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Balaji CG
4)Pon Vaigai Valavan

(57) Abstract :
Title: An agricultural weeder device with removable grass cutter for improved performance The present invention relates to a combined Cono type agricultural weeder (3) and grass cutter (5) with improved blade arrangement and stability. The weeder employs an alternate sequence of straight blades (6) and primary blades (7) mounted on a rotating assembly, thereby reducing mud and weed accumulation, increasing forward operating speed to about 0.714 m/s compared to 0.44 m/s for conventional Cono weeders, and reducing operator fatigue. The blade angle is optimized to approximately 98°, limiting operational stress to about 54.67 MPa. A height-adjustable float or support structure with multiple slots allows efficient use under varying water levels. The invention further integrates a grass cutter attachment comprising a 220 V, 500 W, 9000 RPM AC motor driving a steel disc with nylon rope cutters. The cutter is supported on four detachable wheels with 1–3 inch height slots in 0.5 inch increments, enabling stable operation on uneven surfaces and adjustable grass cutting height.

No. of Pages : 27 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/03/2025
(21) Application No.202441066486 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Device for Automatic Syringe Needle Remover

(51) International classification	:A61M0005320000, A61M0005310000, A61M0005240000, A61M0005340000, A61J0001200000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Pon Vaigai Valavan

(57) Abstract :
Title: A Device for Automatic Syringe Needle Remover The present invention relates to an Automatic Syringe Needle Remover (ASNR) for safe and efficient medical waste disposal. The device integrates a rotating shaft (3) mechanism and a localized heating unit (4) within a closed housing to automatically detach metal needles from plastic syringes. A microcontroller-based control unit (5), preferably using an Arduino UNO, coordinates sensors (8), a heating element, and a servo motor (7) driven shaft to perform needle removal with minimal user input. Heat is applied at the syringe–needle interface to weaken the epoxy/plastic bond, after which controlled torque is applied to separate the needle, which is collected in a dedicated compartment. The system achieves an improved needle removal rate of up to approximately three needles per minute while reducing emissions and risk of needle-stick injuries. The invention enhances safety, automation, compatibility with standard syringes, and ease of use, making it suitable for healthcare facilities as part of responsible biomedical waste management.

No. of Pages : 25 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2024
(21) Application No.202441067157 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MONOLITHIC FABRICATION OF BIOINSPIRED SURGICAL MESH FOR ENHANCED BIO-INTEGRATION USING FEMTOSECOND LASER MICROMACHINING

(51) International classification	:A61F0002000000, A61L0031160000, A61B0017290000, A61L0031140000, A61L0031100000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)SWATHI SUDHAKAR

(57) Abstract :
The present invention provides a biocompatible patterned mesh comprising a polymer substrate wherein the polymer substrate is micro-structured with a bioinspired pattern. The bioinspired pattern comprises micro-structures of 1 to 1000 micron size, wherein the microstructures are pores, grooves, ridges, channels, microvoids, or combinations thereof. The bioinspired pattern mimics the pattern of animal epithelial tissue, human epithelial tissue, human muscle tissue, plant vascular tissue, plant epidermal tissue, or plant meristematic tissue, particularly the pattern of Stingray skin scales, plant pith cells or human bone osseous cells and the mesh comprises a micro-structured polymer substrate, and one or two layers of coatings on the surgical mesh incorporated with antibiotics. Furthermore, the mesh is implantable medical device used to repair and reinforce weakened tissues in the body, exhibiting enhanced features such as flexibility, adaptability and integration with the surrounding tissues in the body.

No. of Pages : 43 No. of Claims : 22

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/09/2024
(21) Application No.202441072416 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "A NOVEL INSECTICIDAL COMPOSITION"

(51) International classification	:A01N25/08, A01N25/10, A01N25/14, A01N25/12, A01N25/30, A01P7/04, A01N43/56, A01N43/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)BOSE, Abhijit
4)JOBI, Eapen

(57) Abstract :
ABSTRACT A NOVEL INSECTICIDAL COMPOSITION The present invention relates to a novel synergistic insecticidal composition comprising a first active ingredient as Chlorantraniliprole, a second active ingredient as Alpha-Cypermethrin and one or more agronomically salts thereof. The present invention further provides a formulation comprising active ingredients Chlorantraniliprole, Alpha-Cypermethrin and one or more agronomically acceptable excipient(s) and process for preparation thereof. The synergistic insecticidal composition is environment friendly and has application in agriculture against a broad spectrum of insect-pests and insecticidal resistance management.

No. of Pages : 80 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202441076145 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN IMPLANTABLE MEDICAL DEVICE FOR INTRACAVITARY FLUID MANAGEMENT AND DRUG DELIVERY

(51) International classification	:A61M25/00, A61M1/36, A61M39/06, A61M39/02, A61M39/10, A61M37/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr.Gargi Mondal

(57) Abstract :
7. ABSTRACT The present invention relates to an implantable medical device (100) for the management of intracavitary fluid and the administration of therapeutic agents. The device comprises a main body (102) configured to be implanted subcutaneously under the skin of a patient. The main body houses a compressible chamber (104), a distal double lumen catheter (106) extending into a peritoneal or pleural cavity, and a proximal double lumen catheter (108) extending into the bloodstream. The distal catheter includes a unidirectional lumen provided with a duck-bill valve (114) for directing intracavitary fluid from the peritoneal or pleural cavity into the compressible chamber, while the proximal catheter includes a unidirectional lumen provided with a duck-bill valve (116) for transferring fluid from the compressible chamber into the bloodstream while preventing reverse flow. A first access port (110) for introducing therapeutic agents or blood products into the bloodstream and withdrawing blood samples, and a second access port (112) for administering therapeutic agents into the peritoneal or pleural cavity and removing intracavitary fluid. The compressible chamber (104) is manually operable to assist controlled fluid transfer. The device is constructed from biocompatible materials and is configured without electronic sensors or complex attachments, thereby simplifying use and improving patient safety and comfort. The figure associated with the abstract is Fig. 1.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/10/2024
(21) Application No.202441077673 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MODIFIED ANION EXCHANGE RESIN FOR REMOVAL OF METALS FROM SPENT LITHIUM-ION BATTERIES AND PROCESS THEREOF

(51) International classification	:C22B26/12, C22B23/00, C22B47/00, C02F1/42, C08F212/08, C22B3/42
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Hrudya P

(57) Abstract :
The present invention discloses ligand-modified anion exchange resins for the selective removal of lithium, cobalt, nickel, and manganese from acid-leached spent lithium-ion batteries. The resins are synthesized through in-situ modification of styrene–divinylbenzene matrices using sodium salts of selected ligands in a deoxygenated ethanol–water medium. The developed process enables efficient sorption and separation of target metals under competitive leachate conditions. Batch continuous and fixed-bed column studies confirm the high removal efficiency, sequential selectivity, and stable performance of the ligand-modified resins. The synergistic chelation–exchange mechanism imparts enhanced selectivity and robustness compared to unmodified resins. The invention provides a scalable and sustainable method for strategic metal removal, supporting circular economy objectives in lithium-ion battery recycling.

No. of Pages : 34 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/10/2024
(21) Application No.202441079399 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DEVICE WITH DUAL INPUT INTERFACE FOR PRODUCTIVITY AND GAMING APPLICATIONS

(51) International classification	:A63F0013240000, G06F0003035400, G06F0003038000, A63F0013235000, G05B0015020000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A device (100) with dual input interface for productivity and gamming applications is disclosed. The device (100) includes a first unit (105) and a second unit (110), each integrated with magnets for coupling, primary click buttons (115), secondary click buttons (120), auxiliary click buttons, plurality of thumb-sticks (135), rechargeable batteries, charging pins (155), and a wireless module for communication with external devices which supports Bluetooth and dongle-based communication. The batteries charge via a connection jack (175) and charging pins (155). An indicator light (180) for indicating power and charging status. A control unit automatically switches between mouse and gamepad modes based on coupling status. At least one unit includes wireless pairing button (160), a plurality of lights (170), a directional pad (145), and a tracking sensor (165). When coupled, the device (100) operates as a pointing input device and when uncoupled, each unit functions as a standalone joypad input device. FIG. 1

No. of Pages : 33 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/11/2024
(21) Application No.202441090269 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CONVERTIBLE CHASSIS SYSTEM FOR THREE-WHEELER VEHICLES

(51) International classification	:B62D21/12, B62D21/14, B62D27/06, B62D24/00, B62K5/06, B62K15/00, B60P3/42
(31) Priority Document No	:NA
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(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a convertible chassis system (100) comprising a front chassis (110) provided with a plurality of mounting apertures (111) and a plurality of interchangeable rear chassis modules including a passenger module (120) and a cargo module (130), each having mating apertures (112) configured to align with the mounting apertures (111). One or more alignment guides (180) are positioned between the front chassis (110) and the rear modules (120, 130) to facilitate accurate module positioning during installation. A selected rear chassis module is secured to the front chassis (110) by an adaptive modular locking system (300) incorporating structurally robust chassis members (150). The adaptive modular locking system (300) includes a latch mechanism (130) configured to engage locking points (170), engagement apertures (140) adapted to receive the latch mechanism, a locking interface (150) for transferring mechanical loads between modules, and an alignment structure (160) for guiding the module into a predetermined mounting position. The system enables secure, repeatable attachment and detachment of modules, thereby allowing the chassis to be selectively reconfigured between passenger and cargo transport configurations.

No. of Pages : 18 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/11/2024
(21) Application No.202441092595 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN LED DRIVER SYSTEM FOR ADVANCED LIGHTING CONTROL BASED ON POWER LINE COMMUNICATION (PLC)

(51) International classification :H05B44/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(72)**Name of Inventor :**
1)KARUN KUMAR ANADASU

(57) Abstract :
ABSTRACT The present invention relates to a LED driver system for advanced lighting control based on power line communication (PLC) (100) that utilizes existing AC power lines for the control of LED lighting parameters. This advanced system integrates a PLC module (104) to modulate and demodulate control signals, enabling comprehensive management of lighting functions such as switching, dimming, color temperature adjustment, and RGBW color control. By eliminating the need for additional wiring or wireless technologies, this PLC-based driver provides a streamlined, reliable, and energy-efficient solution for sophisticated lighting control in residential, commercial, and industrial settings. The system features an AC to DC rectifier (106) for power conversion, a PLC module (104) for signal communication, a microcontroller unit (MCU) (102) for processing commands, a 5-channel TRIAC circuit (108) for regulating power, and an LED lighting unit (110) for executing the control commands, ensuring precise and scalable control of diverse lighting functions. Figure associated with Abstract is Fig. 1

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/11/2024
(21) Application No.202441092596 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MULTI-LEVEL ROTARY SWITCH AND CONTROL SYSTEM BASED ON POWER LINE COMMUNICATION

(51) International classification	:H04L0012280000, G05B0019042000, H04B0003540000, H04L0067120000, H04L0067000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)KARUN KUMAR ANADASU

(57) Abstract :
ABSTRACT The present invention relates to a multi-level rotary switch and control system based on power line communication (100) designed to interface with various sensor modules (104) and a microcontroller unit (MCU) (102) for automation and control in smart devices. The system comprises a multi-level rotary switch (114) for selecting different operational modes, an MCU (102) for processing inputs and controlling outputs, and a memory module (112) for storing system settings and operational data. Additionally, the system integrates a Power Line Communication (PLC) module (106) for reliable communication over existing electrical wiring, an AC to DC rectifier (108) for power conversion, and an LCD display (110) for real-time feedback. The system also incorporates multiple environmental sensors (104), including temperature, humidity, lux, proximity, and millimeter-wave radar sensors, enabling dynamic adjustment of connected devices based on environmental conditions. The invention provides a versatile, user-friendly, and scalable solution for controlling a wide range of smart devices, with applications in home automation and industrial settings. Figure associated with Abstract is Fig. 1

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/11/2024
(21) Application No.202441092597 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A POWER LINE COMMUNICATION (PLC) BASED BLDC FAN CONTROLLER SYSTEM

(51) International classification	:H02K11/33, H02P7/06, H05B47/19
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)KARUN KUMAR ANADASU

(57) Abstract :
ABSTRACT The present invention relates to a power line communication (PLC) based BLDC fan controller system (100) that utilizes Power Line Communication (PLC) technology to transmit control signals through existing AC power lines. The system comprises a PLC module (104), an AC to DC rectifier (106), a microcontroller unit (MCU) (102), a relay switching circuit (108), and a BLDC motor (110). The AC power input is rectified to DC to power the PLC module (104) and MCU (102). The PLC module (104) receives control signals via the power lines, which the MCU (102) decodes and processes to control the speed, direction, and on or off state of the BLDC motor (110). The relay switching circuit (108) controls the BLDC motor (110) operation based on the commands generated by the MCU (102). This system simplifies installation by eliminating the need for additional wiring, offers reliable communication less prone to interference, and provides energy-efficient operation through the use of a BLDC motor (110). The invention is suitable for use in residential, commercial, and industrial applications, particularly in smart home environments where centralized control of multiple devices is desired. Figure associated with Abstract is Fig. 1

No. of Pages : 20 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/11/2024

(21) Application No.202441092890 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR CALCULATING NET PASSIVE SCORE

(51) International classification	:F25B0049000000, F24F0011300000, G06Q0030020100, F25B0001000000, G06Q0030022600
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A SYSTEM AND METHOD FOR CALCULATING NET PASSIVE SCORE The present invention provides a system for calculating Net Passive (NPass) Score. The system according to the present invention includes a processor to calculate the NPass score of a business. The NPass is calculated by using Passives and Detractors percentages, and serves as an augmenting metric to NPS (calculated using Promoters and Detractors, percentages). Using NPass in conjunction with NPS offers a more accurate understanding of business performance. Businesses using NPS in particular would benefit by familiarizing themselves with the new metric – NPass and using it along with the NPS to make more precise inferences of their performance, and customers' satisfaction and loyalty.

No. of Pages : 33 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/12/2024

(21) Application No.202441100518 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PROCESS FOR THE PREPARATION OF FUNGICIDE

(51) International classification	:C07D 239/52, C07D 401/12, C07D 401/00, C07D 239/46, A01N 43/54, A01P 3/00, C07B 41/04, B01J 31/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)NAYAK, SACHIN TIMMANNA

(57) Abstract :
ABSTRACT A PROCESS FOR THE PREPARATION OF FUNGICIDE The present disclosure relates to a process for the preparation of a fungicide, particularly azoxystrobin. The process of the present disclosure is simple, efficient, environment friendly and provides azoxystrobin with comparatively high purity and high yield.

No. of Pages : 25 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/01/2025
(21) Application No.202441101554 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR AUTOMOBILE MOBILITY INFRASTRUCTURE MANAGEMENT USING CIRCULARLY POLARIZED UWB ANTENNA

(51) International classification	:H04W0004020000, G08G0001096700, H01Q0005250000, H04W0004440000, H04W0004460000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Alex P James

(57) Abstract :
ABSTRACT A SYSTEM AND METHOD FOR AUTOMOBILE MOBILITY INFRASTRUCTURE MANAGEMENT USING CIRCULARLY POLARIZED UWB ANTENNA The invention discloses a system and method for automobile mobility infrastructure management using Ultra-Wideband (UWB) technology, advanced antenna architectures, and artificial intelligence. The system (100) comprises a plurality of UWB anchor units (120) equipped with circularly polarized cross-slot antennas (122) backed by Artificial Magnetic Conductor (AMC) surfaces (124) to provide wideband, directional, and polarization-robust radiation. Each anchor includes a UWB transceiver (126) and an AI-enabled processor (128) for training and parking space identification. Vehicles are equipped with uniquely identifiable UWB tags (140) comprising a UWB transceiver (142) and antenna (144). The system operates over UWB channels 5, 6, and 7 and determines vehicle position and parking slot occupancy using time-of-flight, phase difference of arrival, and angle-of-arrival measurements. Signal features are analyzed using an artificial neural network to classify parking availability without cameras. A mobile application integrates GPS-based navigation with UWB-based localization and supports vehicle-to-vehicle and vehicle-to-infrastructure communication for intelligent parking and mobility management. [Figure 1]

No. of Pages : 27 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/12/2024
(21) Application No.202441101658 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTEGRATED GROCERY CREDIT SYSTEM AND METHOD FOR PROVIDING FLEXIBLE PAYMENT SOLUTIONS

(51) International classification	:G06Q0020400000, G06Q0040030000, G06Q0020380000, G06F0021320000, G06Q0020320000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT The invention discloses a grocery credit system (100) configured to provide unified and flexible credit solutions for online and offline grocery purchases. The system includes a user registration module (101) for OTP-based onboarding, KYC verification, address validation, and trust-score-based credit assignment. A credit management module (102) maintains a unified ledger for online and POS transactions with real-time credit validation. A billing and repayment module (103) manages monthly billing cycles, due dates, grace periods, credit blocking, and instant restoration upon repayment. A payment gateway module (104) supports credit-based payments across digital and POS channels. An analytics engine (105) adjusts credit limits and generates store-wise reports, while a fraud prevention module (106) detects unauthorized activity. A user interface module (107) enables ordering, credit visibility, and OTP-based delivery confirmation. A delivery partner module (108) manages order pickup and GPS-based delivery, and an inventory module (109) updates stock levels and low-stock alerts. The figure associated with abstract is Fig. 1.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2024
(21) Application No.202441102508 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN ASSEMBLY FOR A GROUND SURFACE OPERATION TOOL

(51) International classification	: A01D 34/68, A47L 11/40, B25F 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An assembly for a ground surface operation tool The present invention provides an assembly (200) for ground surface operation tool(s) (300) such as grass trimmers, floor cleaners etc. The assembly (200) has at least one frame (210, 220) and single roller (250a) which is rotationally associated with the frame (210). The assembly (200) can be connected to a tool (300) having a housing (320), a prime mover (340) and a ground operation tool (310). The ground operation tool (310) can be a cutter head a brush or a foam pad. In one more embodiment of the invention, the frame member (210, 220) can be integral with the housing (320). The assembly (200) enhances the maneuverability, ergonomics, and operation comfort of the tool (300). The first junction (210aj) defines a user position while operating the ground surface operation tool (300) between the handle (350) and prime mover (340). [Figure 2]

No. of Pages : 15 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/12/2024
(21) Application No.202441102577 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Smart Water Heater with Selective Heating and Discharge Control

(51) International classification	:F24H1/10, F24H15/174, F24H15/172, F24H15/212, F24H15/128
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Title: Smart Water Heater with Selective Heating and Discharge Control The present invention relates to a smart water heater system for heating and dispensing a user-selected quantity and/or temperature of water, providing improved efficiency over traditional fixed-capacity geysers. The system incorporates a storage tank (8), a heating filament (10), and flow control via inlet (2) and outlet (5) valves. At its core, a control system (3) manages operation based on user input from a mode selector (6) and water level data from an ultrasonic sensor (7) and float (4). When a quantity is selected, the control system first checks the water level. If insufficient, it fills the tank and then activates the heater. If the level is sufficient, it checks the temperature and only activates heating if necessary. Finally, the system opens the outlet valve (5) to discharge the precise, user-selected quantity of hot water, automatically closing the valve upon reaching the preset volume to ensure efficiency and a mode selector (6) allows operation either in a smart mode with customized settings or in a conventional mode similar to standard water heaters. Figure 1

No. of Pages : 21 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/12/2024
(21) Application No.202441104195 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AEM ELECTROLYSER WITH CATALYST-COATED POROUS TRANSPORT LAYER AND SCAVENGE-ASSISTED FLOW FIELD DESIGN

(51) International classification	:C25B0001040000, H01M0008025800, H01M0008100000, C25B0009230000, C25B0015080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Title: AEM ELECTROLYSER WITH CATALYST-COATED POROUS TRANSPORT LAYER AND SCAVENGE-ASSISTED FLOW FIELD DESIGN The invention relates to an advanced anion exchange membrane (AEM) electrolyser for green hydrogen production, optimized for dynamic load operation and cost reduction. The electrolyser features bipolar plates (11,12) with substantially straight parallel channels incorporating longitudinally periodic humped floors, wherein hump amplitude progressively increases from inlet to outlet to induce localized shear and micro-recirculation. This configuration ensures uniform wetting of the membrane (1) and porous transport layer (3), promotes bubble detachment, and enhances gas evacuation while utilizing the inherent advantage of parallel straight-channel architectures for easy bubble removal without accumulation. Adaptive electrolyte flow control varies flow rate by any suitable means and dynamically modulates shear rate and lateral infiltration, enhancing bubble removal and membrane wetting throughout operation. Integrated MEA-less electrode assemblies are formed by direct catalyst coating on porous transport layers (2,3) with graded porosity and zonal wettability, improving efficiency, durability, and cost competitiveness. FIG.1

No. of Pages : 28 No. of Claims : 23

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2024
(21) Application No.202441104966 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GRAPHENE-INFUSED ECO-FRIENDLY HYBRID CERAMICNANOCOATING FORMULATION FOR AUTOMOTIVE SURFACE CARE

(51) International classification	:B82Y30/00, B82Y99/00, C09D163/00, C09D133/12, C09D175/04, C09D7/47, C09D7/61, C09D7/65
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Mohammed Daud Ali
3)Hooman Hyat Ali
4)Arshman Hayat Ali
5)Farough Ali

(57) Abstract :
The invention relates to a graphene-infused eco-friendly hybrid ceramic nanocoating formulated for automotive and multi-substrate surface protection. The composition comprises functionalised graphene, an organic binder, a rheology modifier, an inorganic network-forming agent, a hydrophobic silane coupling agent, a levelling agent, fluorinated surface-modifying species, stabilising additives, optional organic co-solvents, and purified water. When applied and cured under ambient conditions, synergistic reactions including epoxy-graphene bonding, silane hydrolysis and condensation, and silicate network formation generate an integrated hybrid organic-inorganic nanocomposite network. The resulting ultra-thin transparent film delivers a high water-contact angle, strong optical clarity, scratch and abrasion resistance, corrosion inhibition, UV and weathering stability, anti-fog behaviour, antistatic and anti-dust performance, and antimicrobial protection. The invention further provides a simple, scalable two-part sol-gel-assisted manufacturing method that ensures uniform dispersion, controlled network development, rapid film formation, enhancing long-term protection and durability across diverse surfaces.

No. of Pages : 47 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/01/2025
(21) Application No.202541001506 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR SIMULATING ARTICULATION TO ASSIST HEARING IMPAIRED

(51) International classification	:G10L0015250000, G09B0019040000, G10L0021100000, G10L0015240000, B25J0009160000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Mr. Manohar N
4)Mrs. Renuka. C
5)Mr. Sivaramakrishnan Velayutham

(57) Abstract :
Disclosed is a system, and method for simulating articulation to assist hearing-impaired, and a method for fabricating the robot. The system comprises sensors, a user device and a robot, where the sensors obtain articulator data from native speakers while the speakers uttering the words. The articulatory data contains profiles of tongue, jaw and lip during the selected speech sound. The profiled data is fed to the robot to mimic the phoneme sound to the hearing-impaired, where the tongue profile is tracked from the positions of tongue contour, the jaw profile is tracked from position of mandible and maxilla and the lip profiles are collected from the position of bottom and upper portion of lip. The robot is developed to understand how to articulate sounds through visual cues, and audio of the selected articulated sounds. The robot helps in enhancing the individuals with hearing impairments to produce speech sounds. Figure 1 will be the reference.

No. of Pages : 42 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2025
(21) Application No.202541005823 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE AI-DRIVEN HYBRID LASER LOCKING FOR QUANTUM SENSING AND PRECISION APPLICATIONS

(51) International classification	:H01S3/139, G06N20/00, H03L7/26
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)SRIKANTH MANGIPUDI

(57) Abstract :
7. ABSTRACT A hybrid laser frequency stabilization system for quantum sensing and precision applications, integrating Saturated Absorption Spectroscopy (SAS), injection locking, and side-of-fringe locking with AI/ML-based adaptive control. The system employs a dual-cycle locking mechanism comprising a PID control (4) cycle to maintain frequency stability within 380 kHz and an auto-relocking cycle to rapidly restore the lock within 3.2 seconds in case of frequency deviations. A tabular Q-learning AI/ML module (5) predicts and corrects frequency drifts by analyzing real-time error signals, laser current, piezo voltage, temperature, and historical operational data, enabling autonomous, real-time adjustments and ensuring lock retention of 94.3% over 8 hours. Side-of-fringe locking enables fine-tuning of the laser frequency at a specific slope of the absorption spectrum. The system features a modular user interface for real-time monitoring, parameter customization, and optional remote access, providing a robust, precise, and autonomous solution for quantum communication, atomic clocks, ultrafast optical ranging, and other high-precision applications. The figure associated with the abstract is Fig.1

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2025
(21) Application No.202541006065 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “HERBICIDAL COMPOSITIONS OF SAFLUFENACIL AND METRIBUZIN”

(51) International classification	:A01N25/08, A01N25/10, A01N25/14, A01N25/12, A01N25/30, A01P13/00, A01N43/707, A01N41/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)BOSE, Abhijit
4)JOBI, Eapen

(57) Abstract :
ABSTRACT HERBICIDAL COMPOSITIONS OF SAFLUFENACIL AND METRIBUZIN The present invention relates to a novel synergistic herbicidal composition comprising Saflufenacil as a first active ingredient, a Metribuzin as a second active ingredient and one or more agronomically acceptable excipients thereof. The present invention further provides a formulation comprising Saflufenacil as a first active ingredient, a Metribuzin as a second active ingredient and one or more agronomically acceptable excipients or fillers and process for preparation thereof. The present invention further provides the process of preparing the said composition which is environment friendly and its application in the field of agriculture against a broad spectrum along with long residual chemical weed control.

No. of Pages : 76 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/01/2025
(21) Application No.202541008304 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AMORPHOUS BORON ADDED CANTOR ALLOY (COCRFEMNNIB)-COATED MULTI LAYERED CONTROLLED SURFACES FOR GAS TURBINE COMBUSTION LINERS AND A METHOD THEREOF

(51) International classification	:F23R3/42, F02C7/00, B23K26/352, C22C19/05
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Kumar, Sunil
4)S, Niketh

(57) Abstract :
ABSTRACT AMORPHOUS BORON ADDED CANTOR ALLOY (COCRFEMNNIB)-COATED MULTI LAYERED CONTROLLED SURFACES FOR GAS TURBINE COMBUSTION LINERS AND A METHOD THEREOF The present invention relates to a gas turbine combustion liner, its method of synthesis and applications thereof. More particularly, the present invention discloses a novel cantor alloy enhanced with boron and gas turbine combustion liners with multi layered controlled surfaces that are laser-textured to enhance their hydrophobicity and further coated with the amorphous boron added cantor alloy (CoCrFeMnNiB). Further disclosed is a fabrication method for the synthesis of the novel gas turbine combustion liner. Also, the gas turbine combustion liner is applicable in various fields, including but not limited to aerospace industries, power generation, marine propulsion, industrial turbines and military applications.

No. of Pages : 38 No. of Claims : 26

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/02/2025
(21) Application No.202541008520 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FUEL COMPOSITION AND A PROCESS FOR ITS PREPARATION

(51) International classification	:C10L1/02, C10L1/04, C10L1/10, C10L1/16, C10L1/30, C10L10/10, C10L10/18, C10L1/82
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT FUEL COMPOSITION AND A PROCESS FOR ITS PREPARATION The present disclosure relates to a fuel composition. The fuel composition of the present disclosure reduces the emission of hazardous gases, undergoes complete combustion, boosts the octane number and enhances the heat content of the fuel. The present disclosure further relates to a simple and scalable process for the preparation of a fuel composition.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2025

(21) Application No.202541015680 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HAIR CONDITIONING COMPOSITION FOR TREATMENT OF DAMAGED HAIR

(51) International classification	:A61Q5/12, A61K8/02, A61K8/18, A61K8/41, A61K8/36, A61K47/20, A61K47/12, A61K47/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Sreelakshmi Poola

(57) Abstract :
The present invention relates to a hair conditioning composition designed for the treatment of damaged hair, particularly hair subjected to chemical treatments such as coloring, bleaching, perming, and straightening. The composition includes a combination of Alpha-lipoic acid (or its derivatives) and an amidoamine, such as Stearamidopropyl dimethylamine, in a specific molar ratio. These ingredients form a stable complex in a solvent, preferably propylene glycol, which facilitates even distribution of the active components on the hair. This composition provides an effective solution for restoring and maintaining the health of hair subjected to harsh chemical treatments.

No. of Pages : 34 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/03/2025

(21) Application No.202541020881 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WOOD PANEL CUTTING ASSISTIVE DEVICE

(51) International classification	:G10L0015220000, A61B0017290000, A47L0011400000, B26B0027000000, G06F0003160000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. J.Jayaprabakar

(57) Abstract :
A wood panel cutting assistive device, comprising an elongated hollow body 101 having proximal and distal end, a handle 102 is gripped by a user to position a cutting blade 103 over a wooden panel that to be cut, an artificial intelligence based imaging unit 104 evaluates dimensions of wooden panel, a microphone 105 receive voice command of user regarding an angle at which wooden panel to be cut, a hydraulic unit 106 extend and retract in a reciprocatory manner to provide reciprocating movement to blade 103 for cutting wooden panel at user specified angle, an IR sensor monitor thickness of wooden panel based on which microcontroller regulates extension and retraction of hydraulic unit 106.

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/03/2025
(21) Application No.202541026229 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HAIR DAMAGE REPAIR COMPOSITION FOR PROTECTION AND RESTORATION DURING CHEMICAL TREATMENTS

(51) International classification	:A61Q5/12, A61K47/24, A61K47/44, A61K47/10, A61K47/08, A61K47/36, A61K31/385, A61K8/41
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Madhu Babu Tunga
2)Sreelakshmi Poola

(57) Abstract :
The present invention relates to a hair damage repair composition for use during chemical treatments such as coloring, bleaching, perming, and straightening. The composition combines Alpha Lipoic Acid (ALA) and basic amino acids, particularly Arginine, to protect hair from oxidative stress, reduce protein loss, and promote repair. It preserves hair integrity while maintaining the results of chemical treatments. The composition can be applied before, during, or after chemical processes in various forms, including leave-on treatments, shampoos, and conditioners. In one embodiment, the composition is part of a treatment kit providing continuous protection throughout the chemical treatment process, improving hair health, strength, and appearance.

No. of Pages : 32 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027027 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PREDICTING WORKFORCE PRODUCTIVITY IN THE GARMENT INDUSTRY A DATA-DRIVEN APPROACH

(51) International classification	:G06Q 10/00, G06Q 10/04, G06Q 10/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Workforce productivity is essential for the efficiency and profitability of the garment industry, where elements such as employee skills, environmental conditions, machinery efficiency, and production timelines substantially influence overall output. Conventional productivity evaluation techniques frequently depend on manual observations and historical averages, resulting in a deficiency of precision and adaptability. This research introduces a data-driven methodology for forecasting workforce productivity through machine learning (ML) and statistical modelling techniques. Utilizing real-time production data, employee performance metrics, and environmental variables, our model discerns critical productivity determinants and offers actionable insights for operational enhancement. We investigate diverse machine learning algorithms, such as regression models, decision trees, and deep learning methodologies, to improve predictive precision. Furthermore, feature selection and explainable AI (XAI) techniques are employed to guarantee interpretability and confidence in the predictions. Experimental results indicate that our methodology can accurately predict productivity trends, detect potential inefficiencies, and facilitate data-driven decision-making in garment manufacturing. This research enhances smart manufacturing practices through the integration of AI-driven predictive analytics for workforce management and operational excellence.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/04/2025
(21) Application No.202541036697 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Ambulance Priority Traffic Management System for Emergency Response Optimization

(51) International classification	:G08G0001087000, A61G0003000000, G08G0001000000, G08G0001070000, G08G0001080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)R SHREYAS
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4)MAHENDRA KUMAR S
5)MOHAN KUMAR M

(57) Abstract :
The Ambulance Priority Traffic Management System for Emergency Response Optimization minimizes ambulance delays at traffic signals by integrating a mobile app with SMS-based communication to control traffic lights via a SIM800L module and Arduino Uno, ensuring efficient emergency response and seamless traffic restoration.

No. of Pages : 15 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/04/2025
(21) Application No.202541036699 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Blockchain-Based Decentralized Identity Management System

(51) International classification	:H04L0009320000, H04L0009000000, H04L0009400000, H04L0009080000, H04L0009060000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Srividhya G
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4)Shreya Nayak

(57) Abstract :
The Blockchain-Based Decentralized Identity Management System offers a secure, privacy-focused approach to digital identity by utilizing blockchain's decentralized, tamper-resistant structure. The system gives users robust control over their identity data through Public/Private Key Generation, Blockchain Ledger, Smart Contracts for Verification, and Third-Party Verifiers with Selective Disclosure. Each user's cryptographic key pair allows secure authentication, while hashed identity data on a distributed blockchain ledger ensures data integrity and immutability. Smart contracts automate the verification of identity claims without human intervention, and Zero-Knowledge Proofs (ZKPs) enable selective disclosure of specific attributes (e.g., age, nationality) without revealing complete personal data, thereby enhancing privacy compliance. This adaptable system is ideal for industries like finance and healthcare, offering real-time identity verification and reducing reliance on centralized authorities, ultimately empowering users with self-sovereign identity management while protecting against data breaches, unauthorized access, and identity theft.

No. of Pages : 11 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/04/2025
(21) Application No.202541037843 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PROCESS FOR PREPARATION OF AZOXYSTROBIN

(51) International classification	:A01P3/00, A01N43/54, C07D239/02, C07D239/28, C07D239/34, C07239/52, A01P3/00, A01N43/54
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Hamirani Bhavinkumar Prafulbhai

(57) Abstract :
The present invention relates to an improved process for the preparation of Azoxystrobin, a strobilurin fungicide. The process comprises reacting (A) (E)-methyl 2-(2-((6-chloropyrimidin-4-yl)oxy)phenyl)-3-methoxyacrylate with 2-cyanophenol, or (B) 2-[(6-chloro-4-pyrimidinyl)oxy]benzonitrile with methyl (aE)-2-hydroxy-a-(methoxymethylene)benzeneacetate or a salt thereof, in the presence of a heterogeneous magnesium-lanthanum (Mg-La) mixed oxide catalyst, a solvent, and a base. The process provides Azoxystrobin in high yield and high purity with reduced formation of dimer and other impurities. The magnesium-lanthanum (Mg-La) mixed oxide catalyst is recoverable and reusable, thereby improving process efficiency, economic viability, and sustainability. The invention is suitable for large-scale industrial production of Azoxystrobin.

No. of Pages : 29 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/04/2025

(21) Application No.202541038896 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI Vigilance Forecasting Sleep Apnea Through Machine Learning

(51) International classification	:A61B5/00, G06N3/08, G16H50/20, A61B5/00, G16H10/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Preethi S

(57) Abstract :
Sleep apnea is a critical health disorder characterized by interruptions in breathing during sleep, leading to significant cardiovascular and metabolic complications. Early detection and intervention are paramount for mitigating these risks. This study introduces an innovative approach termed "AI Vigilance," which employs advanced machine learning (ML) models to anticipate and predict sleep apnea, thereby enabling proactive healthcare. Leveraging data from electronic health records (EHRs), the proposed system utilizes a two-module architecture: the XGBoost module for identifying the most important features, and the Bidirectional Long Short-Term Memory Networks (BiLSTM) module for classifying the likelihood of sleep apnea. The XGBoost module reduces the feature space to the six most significant variables, while the BiLSTM module captures comprehensive temporal dependencies by processing data bi-directionally. The AI Vigilance system achieves a predictive accuracy of 97%, ensuring reliable identification of at-risk patients. This approach facilitates early detection and personalized treatment plans, optimizes healthcare resource allocation, and reduces overall healthcare costs. The integration of AI Vigilance into healthcare systems promises a transformative impact on the management of sleep apnea, enhancing patient outcomes through timely and accurate predictions.

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/04/2025
(21) Application No.202541039374 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD AND SYSTEM FOR AI-OPTIMIZED SECURITY ANALYSIS IN DEVOPS PIPELINES FOR CRITICAL ENERGY AND UTILITY INFRASTRUCTURE

(51) International classification	:G06F8/41, G06F8/71, G06F8/72, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Lakshmi Prasad Rongali

(57) Abstract :
METHOD AND SYSTEM FOR AI-OPTIMIZED SECURITY ANALYSIS IN DEVOPS PIPELINES FOR CRITICAL ENERGY AND UTILITY INFRASTRUCTURE ABSTRACT A method and system integrate artificial intelligence (AI) into DevOps pipelines to analyze and optimize security for the deployment and management of critical energy and utility infrastructure. The system continuously monitors code repositories, integration workflows, and deployment environments, using machine learning models to identify vulnerabilities and security anomalies. It then dynamically adjusts security protocols and suggests mitigation actions in real time. This approach ensures that software and operational updates do not compromise critical infrastructure while simultaneously enabling rapid and secure innovation.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/04/2025
(21) Application No.202541040680 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MACHINE LEARNING-ENHANCED DNA NANOTECHNOLOGY APPROACH FOR CANCER DIAGNOSIS AND TARGETED THERAPY

(51) International classification	:G16H10/60, G16H50/50, G16H20/90, G16H20/10, G16B35/00, G06N3/044, G06N3/08, G16B30/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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12)Vishnupriya K

(57) Abstract :
A Machine Learning-Enhanced DNA Nanotechnology Approach for Cancer Diagnosis and Targeted Therapy is the proposed invention. The proposed invention focuses on understanding the functions of Cancer Therapy. The invention focuses on analyzing the parameters of Enhanced DNA Nanotechnology Approach for Cancer Diagnosis and Targeted Therapy using algorithms of Machine Learning Approach.

No. of Pages : 12 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/04/2025
(21) Application No.202541040688 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An AI-Powered System for Automatic Night Blindness Detection and Evaluation

(51) International classification	:A61B3/00, G16H50/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
The Present Invention is related to the AI-Powered system for automatic Night blindness detection and evaluation. The System integrates the dynamic light simulation, interactive visual tasks, and Artificial intelligence to measure the visually impaired persons in low light conditions. The Light simulation module reconstruct the varying illumination levels, data acquisition module records the physiological response like pupil and eye movement along with task performance metrics like reaction time and accuracy. The AI-Powered system processes the data to detect patterns which are indicative of night blindness comparing the results with trained datasets of normal and visually impaired persons. The system provides the recommendation for further medical consultation or any lifestyle adjustments. The system is portable, scalable and integrated with cloud-based platforms for remote diagnostic, making it suitable for clinical use and large-scale public health initiatives. The invention addresses the need for accessible diagnostic tool for night blindness and visual impairments

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/04/2025
(21) Application No.202541040707 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI- POWERED OPTIMIZED SMART ENERGY METER WITH INDIVIDUAL LOAD MONITORING

(51) International classification	:G05B15/02, G06N20/00, G06N3/08, F24F11/46
(31) Priority Document No	:NA
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(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
AI- POWERED OPTIMIZED SMART ENERGY METER WITH INDIVIDUAL LOAD MONITORING ABSTRACT This invention proposes a comprehensive, AI-powered energy management and control system that integrates directly with the main electrical network of industrial and commercial buildings. Designed to monitor and manage each appliance individually, the system uses an ESP32 microcontroller, ACS712 current sensors, and ZMPT101B voltage sensors to calculate real-time parameters such as voltage, current, power, energy, and cost. It offers an end-to-end solution with intelligent control and continuous monitoring accessible via web interface, mobile application, SMS, email, and an offline LCD display. AI algorithms analyze consumption patterns, detect inefficiencies, predict energy costs, and identify faulty devices in real time. The system enables users to set customizable thresholds, triggering alerts through LED indicators, SMS, and email. This invention stands out by offering device-level energy control with predictive analytics, multiplatform access, and intelligent fault detection—empowering users to optimize energy usage, enhance safety, reduce costs, and support long-term sustainability.

No. of Pages : 18 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/04/2025
(21) Application No.202541040729 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Behavioral Insights into Inventory Management During Supply Chain Disruptions

(51) International classification	:G06Q10/08, G06Q10/087, G06Q10/067, G06Q10/0631
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Bhairab Jyoti Gogoi

(57) Abstract :
ABSTRACT System and Method for Behavioral Insights into Inventory Management During Supply Chain Disruptions The present invention discloses a computer-implemented system and method for behavioral insights into inventory management during supply chain disruptions. The invention addresses inefficiencies arising from human biases such as bounded rationality, reference dependence, and social comparison, which often lead to over-ordering during disruptions. It integrates a behavioral modeling engine using Quantal Response Equilibrium (QRE) and Prospect Theory, a supply disruption scenario simulator, and an inventory optimization module. These components work together to simulate retailer decision-making under uncertainty, predict order behavior, and recommend optimized inventory levels. The system offers a graphical user interface for scenario analysis and real-time decision support. By accounting for behavioral and operational variables, the instant invention improves supply chain resilience, reduces excess inventory, and enhances decision accuracy. This invention is applicable across industries facing disruption risks, including retail, pharmaceuticals, and essential goods.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/05/2025
(21) Application No.202541042885 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Pumpkin formulation and a method of preparation thereof

(51) International classification	:A23L0019000000, A61K0036420000, A61K0009160000, A61K0036906400, A61K0036906800
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a pumpkin formulation which can be reconstituted as a ready-to-serve beverage. The pumpkin formulation comprises of spray dried pumpkin powder, bonding agent, sweetening agent, flavouring agent. The pumpkin formulation of the invention can be a pumpkin tablet. The present invention also discloses a method of preparing the pumpkin formulation.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/05/2025
(21) Application No.202541043580 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PACKAGING SYSTEM AND METHOD FOR MANUFACTURING THEREOF

(51) International classification	:A61K0036889000, C08L0067020000, B29L0031000000, D21H0019840000, B65D0065460000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
PACKAGING SYSTEM AND METHOD FOR MANUFACTURING THEREOF ABSTRACT The present disclosure relates to packaging system and method for manufacturing thereof by coating the packaging system with biocompatible biodegradable polymer emulsion coating. Herein, applying a biodegradable polymer emulsion coating significantly enhances the water and oil resistance of areca palm biomass-based foodware or container. Spray coating or manual brushing of the coating, followed by drying and curing of the containers, creates a thin yet effective barrier layer that maintains the structural integrity of containers during food contact. The coating enables containers to resist deformation when filled with hot liquids or acidic foods, making them suitable for practical use. Modified container designs with wider peripheral edges and proper surface treatment allow effective heat sealing for takeaway applications. Initial water tests showed good results up to 5-8 hours. Overall, coated areca containers are highly suitable for disposable food service applications, especially for short-term use with moist or oily food. FIG. 1

No. of Pages : 50 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/05/2025
(21) Application No.202541047556 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SEMANTICS-BASED NEWS STORY GENERATION FOR VIDEO-HOSTING PLATFORMS USING ARTIFICIAL INTELLIGENCE

(51) International classification	:G06N3/08, G06F40/30, G06F16/783
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
SEMANTICS-BASED NEWS STORY GENERATION FOR VIDEO-HOSTING PLATFORMS USING ARTIFICIAL INTELLIGENCE The present invention discloses a system and method for automated, semantics-based news story generation from video content tailored for video-hosting platforms such as Instagram, TikTok, and YouTube. The invention employs a two-phase AI-driven pipeline: the first phase performs unsupervised video summarization through feature extraction involving motion and color histograms, keyframe identification using K-medoid clustering, and event segmentation based on optical flow intensity; the second phase utilizes a vision transformer model (TimeSformer) and a language model (LLaMA-2) to generate descriptive captions and relevant hashtags from the summarized content. A vision encoder-decoder transformer named SpacetimeGPT is applied to transform selected keyframes into meaningful sentences representing video semantics. The invention enables efficient and high-quality reel generation, semantic captioning, and tag creation, significantly reducing editing time and cost while improving discoverability and narrative consistency in video-based news dissemination. The figure associated with the abstract is Fig. 1.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/05/2025
(21) Application No.202541050160 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART DRAINAGE MONITORING SYSTEM

(51) International classification	:G08B0021100000, G06Q0050100000, E02D0029140000, G06Q0050260000, E03F0007000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Kamalavarshini .R
6)Keerthika .M

(57) Abstract :
The Smart Manhole Monitoring System is designed to improve safety, hygiene, and efficiency in urban drainage systems. Manholes are essential for city drainage, but when left open, damaged, or blocked, they can cause accidents, traffic disruptions, and sanitation issues. This system helps prevent these problems by using smart sensors and microcontrollers to monitor manholes in real time. The system works by using an Arduino UNO microcontroller that collects data from various sensors such as Water Level Sensor, Tilt Sensor, Gas Sensors. The system can spot blocked drains, rising water levels, harmful gases, or open manholes without needing manual checks. By keeping track of rising water levels, the system alerts maintenance teams before flooding happens, reducing damage. Detects open or damaged manholes, helping prevent accidents for pedestrians, vehicles, and city workers. Runs on low power, making it cost-effective and suitable for long-term use in urban areas.

No. of Pages : 13 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/05/2025
(21) Application No.202541051144 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EMBEDDED SMART MICRO/ NANO SENSOR SYSTEM FOR PRECISION AGRICULTURE AND PLANT HEALTH MANAGEMENT

(51) International classification	:H04W0004800000, G01N0021640000, G01N0033000000, A61B0005145000, G06Q0050020000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
EMBEDDED SMART MICRO/ NANO SENSOR SYSTEM FOR PRECISION AGRICULTURE AND PLANT HEALTH MANAGEMENT The present invention relates to an embedded smart micro/nano sensor system for precision agriculture and plant health management. The system comprises a micro-electro-mechanical system (MEMS) or nano-electro-mechanical system (NEMS) chip embedded within a plant, integrated with a plurality of miniature sensors capable of continuously monitoring key physiological and metabolic parameters. These include sap flow rate, chlorophyll fluorescence, electrical conductivity, pH and nutrient levels, gas exchange (CO_2 and O_2), as well as ambient temperature and humidity. The sensor data is wirelessly transmitted in real-time using Internet of Things (IoT) technologies such as Bluetooth Low Energy (BLE), LoRa, Wi-Fi, 5G, or Near-Field Communication (NFC). The system is powered through renewable and sustainable energy sources, including plant-based biofuel cells, piezoelectric nanogenerators, miniature solar cells, or biodegradable batteries. The transmitted data is processed and analyzed by artificial intelligence algorithms to predict plant stress, detect disease onset, and provide actionable insights for optimizing water, nutrient, and pesticide use. The invention offers a non-invasive, self-sustained, and environmentally friendly solution for enhancing crop productivity and health monitoring in real time.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/06/2025
(21) Application No.202541056407 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE MODULATION AND CODING SCHEMES FOR RELIABLE 4G/5G COMMUNICATION

(51) International classification	:H04L1/00, H04L27/34, H03M13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Adaptive Modulation and Coding (AMC) is a cornerstone technology for reliable and efficient communication in 4G and 5G networks. By dynamically adjusting modulation schemes, such as QPSK, 8-QAM, 16-QAM, 64-QAM, and 256-QAM, and coding rates based on real-time channel conditions, AMC optimizes data throughput while maintaining transmission reliability. In 4G, AMC primarily enhances spectral efficiency to support high-speed data services. In 5G, it extends these capabilities to meet modern demands, including ultra-low latency, high reliability, and increased capacity, essential for applications like IoT, augmented reality, and autonomous systems. Advanced error correction techniques, such as Turbo Coding, Low-Density Parity-Check (LDPC) coding, and Polar Coding, are integrated with AMC to minimize transmission errors in challenging conditions like interference and fading. These coding schemes ensure robust and efficient data transmission by correcting errors at high speeds, enabling seamless communication even in adverse environments. The synergy of adaptive modulation and advanced coding ensures a consistent Quality of Service (QoS) across diverse network scenarios. This adaptability is critical for supporting a wide range of use cases, from enhanced mobile broadband to mission-critical communications, solidifying AMC’s role as a key enabler of next-generation wireless communication systems.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/06/2025
(21) Application No.202541061081 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ACTIVATED CARBON MATERIAL AND A METHOD FOR ITS PREPARATION

(51) International classification	:C01B 32/00, C01B 32/05, C01B 32/30, C01B 32/312, C01B 32/342, C01B 32/348, H01G 11/22, H01G 11/34
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Krateeka Madan

(57) Abstract :
ACTIVATED CARBON MATERIAL AND A METHOD FOR ITS PREPARATION The present disclosure relates to the field of an activated carbon materials specifically to a superhydrophillic, and electrically conductive carbon materials sourced from lignocellulosic biomass that are suitable for energy storage, catalysis, adsorption, and purification applications.

No. of Pages : 31 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/06/2025
(21) Application No.202541061766 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DIGITIZED VISUAL PERCEPTION SYSTEM FOR CHILDREN WITH SPECIAL NEEDS AND A METHOD THEREOF

(51) International classification	:G09B19/00, G06N20/00, G06F3/048
(31) Priority Document No	:NA
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(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT A DIGITIZED VISUAL PERCEPTION SYSTEM FOR CHILDREN WITH SPECIAL NEEDS AND A METHOD THEREOF The present disclosure discloses a digitized visual perception tool for children with special needs. The system comprises a user interface module (110) to provide interactive interfaces, including sign-in (111), dashboard (112), and analytics (116) functionalities. An assessment module (120) evaluates visual perception skills, while a game-based assessment engine (130) conducts skill-specific evaluations using interactive games. An adaptive learning module (140) with a difficulty adjustment technique (141) and a personalization engine (142) dynamically modify content based on user performance. A real-time feedback module (150), comprising a performance analyzer (151) and feedback generator (152), delivers actionable insights. A data analytics module (160) tracks user trends and generates detailed reports, supported by a database (170) storing profiles, results, and game data. The method (200) includes steps like authentication, assessment, and machine learning-driven personalized interventions. The system enhances engagement, provides adaptive learning, and generates comprehensive progress insights for users with diverse needs.

No. of Pages : 35 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/06/2025

(21) Application No.202541061769 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Smart Drone System Utilizing AI for Efficient Pesticide Dispersion and Crop Surveillance

(51) International classification	:A01M7/00, G06N20/00, G06T7/00, G06Q50/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Smart Drone System Utilizing AI for Efficient Pesticide Dispersion and Crop Surveillance The Smart Drone System Utilizing AI for Efficient Pesticide Dispersion and Crop Surveillance, introduces an innovative, autonomous aerial solution aimed at revolutionizing agricultural practices by integrating artificial intelligence (AI) with drone technology. This system is designed to enhance precision, reduce environmental impact, and improve crop health monitoring. The smart drone employs advanced machine learning algorithms and computer vision techniques to identify pest-infested zones, nutrient deficiencies, and crop stress patterns in real time. Equipped with multispectral and thermal imaging sensors, the drone system gathers high-resolution data, enabling farmers to make data-driven decisions while minimizing resource wastage. The AI component dynamically calculates optimal flight paths, pesticide quantities, and dispersion patterns based on the crop type, growth stage, and infestation severity, ensuring targeted application and preventing overuse of chemicals. Furthermore, the system facilitates continuous crop surveillance, offering predictive insights into pest outbreaks and plant diseases through pattern recognition and anomaly detection. This technology significantly reduces manual labor, operational costs, and pesticide runoff, contributing to sustainable agriculture and environmental conservation. The integration of cloud connectivity and edge computing allows seamless data analysis, reporting, and remote operation, making it suitable for both small-scale and large-scale farms.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/06/2025

(21) Application No.202541061774 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NAVA SANKALPA-CAREER TRANSITION ASSISTANT FOR INDIAN MILITARY VETERANS

(51) International classification	:G06Q10/1053, G06F40/30, G06F40/40, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
NAVA SANKALPA-career transition assistant for Indian military veterans is the proposed invention. The reintegration of Indian military veterans into the civilian workforce presents unique challenges due to domain-specific language mismatches, non-standard resume formats, and unstructured articulation of transferable skills. This paper introduces Nava Sankalpa, an AI-powered career transition assistant designed to automate and streamline key stages of the civilian job-seeking process for ex-servicemen. The system comprises four core modules: (1) a resume parser using Hugging Face Transformers for structured field extraction, (2) a CV generator powered by Meta's LLaMA-4 via the Groq API to convert military experience into ATS-optimized civilian resumes, (3) a job recommendation engine using FAISS for semantic role matching, and (4) a resume-aware chatbot implemented with Lang Chain and retrieval-augmented generation (RAG).

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/06/2025
(21) Application No.202541061804 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND FABRICATION OF ORGANIC MICROBEADS FOR COSMETIC APPLICATION AS SUSTAINABLE SUBSTITUTE FOR MICROPLASTIC BEADS

(51) International classification	: A61K8/02, A61K8/73, A61Q19/00, A61Q19/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract DESIGN AND FABRICATION OF ORGANIC MICROBEADS FOR COSMETIC APPLICATION AS SUSTAINABLE SUBSTITUTE FOR MICROPLASTIC BEADS The present invention relates to the design and fabrication of biodegradable organic microbeads for cosmetic applications, offering a sustainable alternative to conventional microplastic beads. The microbeads are composed of natural ingredients, specifically rice flour and turmeric, combined with sodium alginate and formed using an ionotropic gelation technique involving calcium chloride. These organic beads function as gentle exfoliating agents in skincare products such as face scrubs, body washes, and cleansers. The formulation ensures skin compatibility, non-toxicity, and environmental safety. Experimental validation demonstrates that the beads possess uniform morphology (~1893 µm), remain stable across a wide pH range, and exhibit high cell viability without inducing oxidative stress. Natural composition not only delivers effective exfoliation but also aligns with global efforts to eliminate plastic-based pollutants in cosmetics. This invention addresses the dual need for dermatological safety and environmental sustainability, making it a suitable replacement for synthetic microbeads in the personal care industry.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/07/2025
(21) Application No.202541063365 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD FOR QUANTUM PROFILING OF NATURAL EXTRACTS USED IN AYURVEDIC FORMULATIONS

(51) International classification	:G01N0030880000, G06N0007010000, G06N0010000000, H04L0009080000, G06N0010600000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT METHOD FOR QUANTUM PROFILING OF NATURAL EXTRACTS USED IN AYURVEDIC FORMULATIONS
The invention relates to a method for analytical profiling and characterization of natural extracts used in Ayurvedic formulations using quantum-integrated techniques. The process begins with formulation input and sample selection (102), followed by the standardization of the natural extracts through conventional analytical methods (104). Structural and molecular properties are further assessed using quantum-enhanced techniques (106), such as nitrogen-vacancy sensors and quantum metrology. Integrated data from both classical and quantum analyses is consolidated in a data integration module (108). Active components are profiled using quantum simulations and computing (110) to determine electronic structure and vibrational properties. The results are compiled into a comprehensive analytical profile (112), which supports regulatory, therapeutic, and quality control applications. A system automation platform (114) coordinates the process, ensuring consistency and scalability. The invention provides a reproducible, high-resolution framework that bridges traditional medicine with frontier quantum technologies for modern pharmacological evaluation. Fig. 1

No. of Pages : 27 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/07/2025

(21) Application No.202541065283 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Design of Switched Capacitor based on Asymmetrical Multilevel Inverter: Improving Step-Up and Step-Down Functional Capabilities for EV Application.

(51) International classification :H02M7/483, H02M1/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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4)Mr. Girish M
5)Ms. Dhanyashree B

(57) Abstract :
A versatile multilevel inverter designed for both step-up and step-down voltage conversion using a single input source. The design is inductor-free, relying on switched-capacitor (SC) technology. Alternatively, the connection of flying capacitors is arranged to balance the voltage between series-connected main capacitors. The inverter generates a multilevel output by connecting series capacitors to the output terminal through transfer switches and is capable of both increasing (step-up) and decreasing (step-down) the output voltage. In MATLAB, we propose a 17-level output for the inverter, with a step-up function and a step-down function for the DC converter which provides flexibility in adjusting the conversion ratio to suit different voltage needs that achieves approximately 83% efficiency in the up-mode and 93% efficiency in the down-mode.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/07/2025

(21) Application No.202541065411 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Indian Voices and languages for beginners using AI and ML

(51) International classification	:G06F8/30, G09B19/00, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Ullas K
6)Ranjan G R

(57) Abstract :
In recent years, advancements in language learning technology have shown great potential for improving communication and educational outcomes, particularly for Indian languages. This project presents a React Native and Spring Boot-based Indian language learning application that facilitates seamless interaction and learning through interactive lessons, quizzes, and real-time feedback. The application leverages machine learning algorithms and natural language processing techniques to enhance the learning experience for users of all ages. Utilizing libraries such as NLTK for text processing and TensorFlow for speech recognition and classification, the application provides users with accurate pronunciations and contextual usage of various Indian languages. The system is designed to cater to a diverse audience, including beginners and advanced learners, with features that adapt to individual learning paces and preferences. Our approach aims to provide an accessible, cost-effective, and user-friendly solution, making language learning easier for individuals interested in mastering Indian languages. The application's scalability allows for the continuous addition of new lessons, dialects, and cultural contexts, ensuring a rich and immersive learning experience. The Indian language learning application holds significant potential to transform language acquisition for learners. Its primary scope is to bridge the communication gap by providing resources and tools for effective language learning, enabling more fluid interactions between speakers of different languages. This technology can be applied in various environments, including educational institutions, community centers, and online learning platforms, where language barriers often pose challenges. By fostering inclusivity and promoting cultural exchange, this React Native and Spring Boot-based application not only enhances language proficiency but also enriches users' understanding of diverse Indian cultures, ultimately empowering them in both personal and professional setting.

No. of Pages : 17 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/07/2025
(21) Application No.202541065896 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Dynamic Risk Assessment Model for Retail Investors in Equity Markets

(51) International classification	:G06Q40/04, G06Q40/06, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT: Title: Dynamic Risk Assessment Model for Retail Investors in Equity Markets The invention introduces a dynamic, AI-powered risk assessment model tailored for retail investors in equity markets. Unlike static profiling tools, this system integrates real-time market data, investor behavior patterns, and sentiment analysis from news and social media to generate a personalized and continuously updating risk score. The architecture comprises layered modules including a Market Data Interface, Behavioral Tracking Layer, Sentiment Processor using NLP, and a Risk Scoring Engine powered by machine learning. A feedback mechanism refines the model based on trading outcomes and user interactions. The system delivers custom alerts and investment recommendations via dashboards, mobile apps, and connected fintech platforms. It enables proactive risk management through actionable insights, helping investors mitigate volatility, optimize portfolios, and avoid emotional trading. Designed for seamless integration with trading applications and robo-advisors, the invention empowers retail participants with institutional-grade analytics for smarter, safer decision-making in dynamic market conditions.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/07/2025
(21) Application No.202541066096 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM FOR SECURE BIOMETRIC IDENTITY VERIFICATION AT A TERMINAL INTERFACE AND A METHOD THEREOF

(51) International classification	:G06F21/32, G06V40/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
ABSTRACT A SYSTEM FOR SECURE BIOMETRIC IDENTITY VERIFICATION AT A TERMINAL INTERFACE AND A METHOD THEREOF The present disclosure discloses a system for secure biometric identity verification at a terminal interface. The system (100) comprises a terminal interface (102) configured to receive user inputs, display prompts, and initiate authentication. An input acquisition module (104) collects user identification data, which is used by an OTP generation module (106) to create and transmit a secure, time-bound one-time password (OTP). The OTP verification module (108) validates the user-entered OTP, triggering a facial image capture module (110) upon successful verification. A face detection module (112) extracts the facial region, which is then normalized by a pre-processing module (114). A feature extraction module (116) generates a facial feature vector, which the biometric matching module (118) compares with stored templates. The verification decision module (122) determines authentication based on a similar threshold. A processor (124) manages all modules, ensuring secure data flow, real-time processing, and session-level security. Figure 1

No. of Pages : 37 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/07/2025
(21) Application No.202541067044 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN OF A MULTIBAND THZ MIMO ANTENNA WITH ML REGRESSION FOR ENHANCED ISOLATION IN 6G-DRIVEN IOT ENVIRONMENTS

(51) International classification	:H01Q 1/24, H04B 7/0413, G06N 20/00, H04L 41/16, H01Q 21/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Design of a Multiband THz MIMO Antenna with ML Regression for Enhanced Isolation in 6G-Driven IoT Environments is the proposed invention. The proposed invention focuses on understanding the functions of Multiband THz MIMO Antenna. The invention focuses on analyzing the parameters of Enhanced Isolation in 6G-Driven IoT Environments using algorithms of ML Regression technique.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/07/2025
(21) Application No.202541067111 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Organic Waste to Wellness: A Green Approach to Diabetic-Friendly Footwear

(51) International classification	:A43B1/02, A43B1/06, A43B1/00, A43B13/02, C08L97/00, A01N65/00, B29C67/24, C08J3/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Effective utilization of organic waste and natural plant-based materials into value-added products remains a significant challenge in today's world. A large portion of organic waste often goes unused, despite the fact that many such materials possess inherent medicinal and therapeutic properties. This proposal aims to address this issue by converting commonly discarded organic waste into a useful, health-beneficial product. The project focuses on the development of eco-friendly, therapeutic footwear using natural materials derived from organic waste such as potato periderm (Solanum tuberosum), Tanner's Cassia (Senna auriculata), Acalypha indica, bitter gourd, turmeric, and neem leaves, combined with natural latex and banana fiber. These materials are selected not only for their biodegradability but also for their medicinal and anti-inflammatory properties. The primary objective of this proposal is to create footwear specifically beneficial for individuals with diabetes and cardiac conditions. The footwear design incorporates acupuncture-inspired projections on the insole to stimulate nerve endings and enhance circulation. This stimulation supports improved blood flow, helps regulate insulin levels, and contributes to the maintenance of healthy blood sugar levels in diabetic patients. By integrating traditional medicinal knowledge with sustainable design practices, this project seeks to promote health and environmental well-being through the innovative use of organic waste. In addition to promoting health and comfort, the product's complete biodegradability ensures that its disposal will not harm the environment, making it a zero-waste, sustainable solution that aligns with both health and ecological goals.

No. of Pages : 15 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/07/2025
(21) Application No.202541067112 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN OPTIMIZATION FRAMEWORK POWERED BY MACHINE LEARNING FOR THE DESIGN OF FUNCTIONALLY GRADED MATERIALS IN STRUCTURAL APPLICATIONS

(51) International classification	:A61B0005000000, G06T0007110000, H04L0041160000, C08J0005040000, G06Q0050260000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An Optimization Framework Powered by Machine Learning for the Design of Functionally Graded Materials in Structural Applications is the proposed invention. The proposed invention focuses on understanding the functions of Structural Applications. The invention focuses on analyzing the parameters of Functionally Graded Materials using algorithms of Machine Learning Approach.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/07/2025
(21) Application No.202541068475 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SUSTAINABLE ECO PACK

(51) International classification	:B32B0027180000, C09D0007400000, C08L0067040000, B32B0027300000, B32B0027320000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SUSTAINABLE ECO PACK The present invention relates to sustainable eco packing material made from renewable materials that is biodegradable completely. The invention relates to a plastic-free, paper-based packaging material for liquids such as milk and water. The packaging material comprises a high-strength virgin pulp paper base coated with a food-grade acrylic emulsion providing water, oil, and grease barrier properties. The coated paper achieves a WVTR of 1.6 g/m²/day, comparable to polyethylene, while being fully compostable and environmentally safe. The pouches are heat-sealable and compatible with existing filling machines, offering a cost-effective and scalable alternative to single-use plastic pouches. Fig. of abstract: Fig. 1.

No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/08/2025
(21) Application No.202541073829 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “Z Card: A Smart, Patient-Centric Digital Health Identity and Integrated Medical Record System

(51) International classification	:G16H10/60, G16H10/64
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
The present invention discloses a smart, patient-centric health record system named Z Card comprising an NFC and QR-enabled physical card for secure storage and access of essential medical information. The system supports encrypted offline access during emergencies and controlled data sharing with healthcare providers. Emergency biometric authentication using an external device enables access to encrypted records when the patient is unconscious or unable to communicate. Integration with healthcare systems improves continuity of care, reduces medical errors, and enhances patient safety.

No. of Pages : 6 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/08/2025
(21) Application No.202541075322 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM FOR AI-AUGUMENTED SPATIAL PLANNING, COST ESTIMATION AND SERVICE-PROVIDER MATCHING AND METHODS THEREOF

(51) International classification	:G06N0003045000, G06F0018220000, G06F0016330000, G06Q0040120000, G06N0005040000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Application No: 202541075322 SYSTEM FOR AI-AUGMENTED SPATIAL PLANNING, COST ESTIMATION AND SERVICE-PROVIDER MATCHING AND METHODS THEREOF ABSTRACT The present invention relates to a system(100) and method for multi-objective spatial design optimization. The system encodes spatial layout parameters of a built environment as decision variables and defines multiple competing objective functions. An offline multi-objective optimization module(108) performs direct evaluation to generate and store Pareto-optimal design configurations in a database. A surrogate prediction model is trained using the stored Pareto-optimal configurations to enable rapid evaluation of new or modified designs. An evaluation control module(114) selectively operates between direct evaluation and surrogate-based evaluation based on predefined criteria including prediction uncertainty, deviation from the Pareto-optimal manifold, or accuracy thresholds. The system(100) further supports preference-driven exploration through inverse mapping from user-defined objective preferences to candidate design configurations and includes an incremental learning mechanism for updating the Pareto solution database(110) and retraining the surrogate model. The invention enables efficient, accurate, and adaptive real-time evaluation of spatial and interior design layouts while reducing computational overhead. evaluating new or modified design configurations by selectively: (FIG. 1)

No. of Pages : 48 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/08/2025
(21) Application No.202541077860 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WIFI Pickup Robot to Assist the Elderly Or Individuals With Limited Mobility

(51) International classification	:B25J0009160000, B25J0011000000, B25J0005000000, G06V0020100000, G05D0001000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to an IoT-enabled, voice-controlled service robot capable of performing manual tasks such as picking up objects, opening doors, and operating switches. The robot features a metal chassis taller than two feet, powered by a 12V battery with a voltage regulator. A Raspberry Pi 4 (8GB RAM) serves as the main controller, integrating a Pi camera for live video, ultrasonic and infrared sensors for obstacle detection, and a servo-motor-driven robotic arm with a gripper for object handling. Mobility is provided by gear motors with wheels, controlled via an L298 motor driver. The robot can be operated through voice commands or remotely via an IoT interface, allowing real-time camera viewing and control over the internet. This combination of mechanical dexterity, sensor-based awareness, and wireless connectivity enables efficient use in domestic, industrial, and assistive applications.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/08/2025
(21) Application No.202541079941 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NANO-FERTILIZER AND SYNTHESIS METHOD THEREOF

(51) International classification	:C05G3/00, C05D9/02, C05F11/00, C05F11/08, A01N59/00, A01N65/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
A nano-fertilizer comprising chitosan-coated iron oxide nanoparticles, wherein the iron oxide nanoparticles are derived from iron oxide nanoparticles and chitosan in a range of 1:1 to 5:1, preferably in the ratio of 3.75:1, the method for synthesizing the nano-fertilizer includes mixing fine powders of Kappaphycus alvarezii and Turbinaria conoides with double distilled water, heating and stirring the mixture with NaOH to obtain the aqueous mixed seaweed extract, dissolving $FeSO_4 \cdot 7H_2O$ in double distilled water and mixing with the extract under alkaline conditions, adding ascorbic acid dropwise at 50–70°C with stirring, followed by NaOH and boiling for 4–5 hours to form iron oxide nanoparticles, cooling, sonicating, and centrifuging to isolate the nanoparticles, dissolving chitosan in 1M acetic acid and adding the iron oxide nanoparticles with overnight stirring, and centrifuging, washing, and drying the resulting chitosan-coated iron oxide nanoparticles for use as a nano-fertilizer.

No. of Pages : 29 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/08/2025
(21) Application No.202541081032 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An Optimization-Based Decision Support System for Multi-Stage Supply Chain Management

(51) International classification	:G06Q10/087, G06Q10/0637, G06Q10/08, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An optimization-based decision support system (DSS) for multi-stage supply chain management is a computational framework designed to enhance decision-making across interconnected stages of a supply chain, including procurement, production, inventory, distribution, and customer service. This research presents a novel DSS that integrates advanced optimization models with predictive analytics and simulation techniques to address the complexities of modern supply chains characterized by dynamic demand, capacity constraints, lead-time variability, and cost trade-offs. The system leverages linear, nonlinear, and mixed-integer programming approaches, combined with multi-objective optimization, to simultaneously minimize costs, maximize service levels, and ensure sustainability in supply chain operations. By embedding real-time data processing, the DSS supports adaptive decision-making under uncertainty, enabling robust planning for scenarios such as demand surges, supplier disruptions, and logistics delays. Additionally, the framework incorporates sensitivity analysis and scenario-based simulation, empowering managers to evaluate alternative strategies and mitigate risks proactively. The modular architecture ensures scalability across industries, allowing customization for both global and regional supply networks.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/08/2025
(21) Application No.202541081036 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A STUDY ON AWARENESS OF INVESTORS IN CRYPTO CURRENCY INVESTMENTS TO THE CITY OF CHENNAI

(51) International classification	:G06Q40/04, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
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(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
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(57) Abstract :
A STUDY ON AWARENESS OF INVESTORS IN CRYPTO CURRENCY INVESTMENTS TO THE CITY OF CHENNAI ABSTRACT Crypto currency is a digital asset framed to work as a medium of exchange. It uses cryptography to secure financial transactions, control the creation of additional units and verify the transfer of assets. Crypto currencies use decentralized control as opposed to centralized currency offered by Central banks. The crypto currency investment has been growing at a rapid pace after the introduction of Bitcoin in the year 2009. Despite the high risks associated in this investment, it has generated quick wealth for many investors. There are different crypto currencies such as Bitcoin, Ethereum, Binance Coin, Uniswap, etc. are available for investment. In this aspect, an attempt has been made to study the awareness and identify the investment alternatives among the investors in crypto currency investments in Chennai. The sample size consists of 200 investors using random sampling procedure. The statistical tools used in the study are frequency tables and non-parametric Chi-square tests. The information collected from the investors formed the basis for analysis and interpretation of data, to derive the findings and to arrive at conclusion. The invention indicates that the awareness of investors in crypto currency investments in very less. The investors should be first be educated about the salient features of the crypto currency investment and make them better understand the nature and possibility of risk. Steps should be taken for creation of more financial awareness among the investors and particularly women in order to encourage more investments. Government should enforce laws for crypto currency investments and also take steps to encourage more investment among all the age group of investors and there should be a regulatory and monitoring authority in order to protect the interest of investors and crypto currency industry.

No. of Pages : 15 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/08/2025
(21) Application No.202541081050 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GREEN SYNTHESIS OF CUO-ZNO/G-C3N4 NANOCOMPOSITES FOR EFFICIENT PHOTOCATALYTIC TREATMENT OF WASTEWATER

(51) International classification	:B01J35/39, B01J35/393, B01J37/084, C02F1/30, C02F101/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
GREEN SYNTHESIS OF CUO-ZNO/G-C_3N_4 NANOCOMPOSITES FOR EFFICIENT PHOTOCATALYTIC TREATMENT OF WASTEWATER ABSTRACT The present invention relates to a green-synthesized visible-light-responsive photocatalytic nanocomposite (122) comprising exfoliated graphitic carbon nitride (g-C_3N_4) (118) integrated with copper oxide-zinc oxide (CuO-ZnO) nanoparticles (114) prepared via a plant-based method using Tragia involucrata leaf extract (109). The extract is obtained by washing (101), drying (102), and aqueous extraction (104) of leaves (100), followed by filtration (105). A mixed metal salt solution of copper nitrate (106) and zinc nitrate (107) is reacted with the extract and sodium hydroxide (110) to form CuO-ZnO precipitate (111), which is calcined after purification (113). g-C_3N_4 is thermally synthesized from melamine (115) and exfoliated (117) to increase surface activity. The components are uniformly mixed via ultrasonication (120) and hydrothermally treated (121) to form the nanocomposite. The resulting material exhibits enhanced degradation efficiency for pollutants such as crystal violet and ciprofloxacin under visible light and shows high stability over multiple cycles.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/08/2025
(21) Application No.202541081252 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Method and System for Predicting Adolescent Mental Health Risks via Correlated Classroom Analytics

(51) International classification	:A61B5/16, G16H20/70, A61B5/00, G16H50/20, G16H50/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a system and method for predicting adolescent mental health risks within educational environments. The system integrates two primary data streams: real-time environmental parameters captured by Internet of Things (IoT) sensors in classrooms, and psychosocial data collected through a digital emotional check-in platform for students. A novel AI-powered analytics engine processes and correlates these disparate data sets to generate a singular, predictive metric, the Classroom Mental Wellness Index (CMWI). Unlike conventional health monitoring systems that are often reactive, this invention provides real-time, actionable insights to educators and school administrators. By quantifying the impact of the psycho-socio-environmental climate on student well-being, the system enables proactive interventions, allowing for targeted support before mental health risks escalate. The invention presents an evidence-based, scalable solution that advances educational technology and adolescent mental health interventions.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/08/2025
(21) Application No.202541082760 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED GREEN HOUSE SENSORS FOR OPTIMIZING CARBON SEQUESTRATION AND PLANT GROWTH

(51) International classification	:G06Q50/02, G06N20/00, H04W4/38
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT For the purpose of maximizing both carbon sequestration and plant growth, this study offers an automated greenhouse system that is integrated with sensors that are enabled by the internet of things (IoT) and artificial intelligence. For the purpose of capturing environmental factors in real time, the framework makes use of CO2 sensors, soil and nutrient detectors, humidity and temperature monitors, and light sensors. A central optimization module known as the Carbon-Aware development Optimization Engine (CAGOE) examines sensor data in order to strike a balance between the efficiency of plant development and the amount of carbon that is absorbed by the plant. The performance of plants is predicted by machine learning algorithms, which also control the actuators that are responsible for watering, nutrition dosing, CO2 enrichment, and illumination. Integration with the cloud makes it possible to store data for an extended period of time, do predictive analytics, and evaluate sustainability, while a user dashboard gives researchers and farmers insights that they can put into action. Increasing yield, increasing carbon sequestration, and encouraging resource efficiency are all ways in which this innovation contributes to the mitigation of climate change while simultaneously ensuring the production of food in a sustainable manner.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084200 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD AND A SYSTEM FOR GENERATING AN URBAN 3-DIMENSIONAL (3D) MODEL OF AN AREA

(51) International classification	:G06T17/05, G06T17/00, G06V20/64
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Tomohiro Fukuda
3)Shilpi Chakraborty

(57) Abstract :
The present subject matter discloses a method (900) for generating an urban 3Dmodel of an area. The method (900) includes receiving a plurality of types of historical data associated with an area as an input. The method (900) includes performing a plurality of image enhancement techniques on the plurality of types of historical data to extract relevant information from plurality of types of historical data and generate modified data. The method (900) includes analysing a portion of the relevant information to determine a plurality of spatial parameters associated with the area. The method (900) includes processing concurrently to analysis of the portion of the relevant information the relevant information to generate the urban 3D model of the area. The urban 3D model is historically contextualized based on the plurality of types of historical data. (FIG. 3)

No. of Pages : 37 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084202 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT-Based Environmental Monitoring and Multi-location Live Tracking System with Cloud Analysis Using ESP32

(51) International classification	:G01N0033000000, G01W0001100000, H04W0004380000, G01D0021020000, G06Q0010040000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
A Real-time environmental monitoring involves tracking air quality, temperature, humidity, atmospheric pressure, wind speed, and light intensity. This paper presents an IoT-based environmental monitoring system utilizing the ESP32 microcontroller along with sensors such as DHT11 (temperature and humidity), BMP280 (atmospheric pressure), MQ series (air quality), an anemometer (wind speed), and an LDR (light intensity) to collect data. The collected data is transmitted and stored in Firebase, a cloud-based database, enabling real-time monitoring, historical data analysis, and secure storage. A custom-built mobile application, developed using MIT App Inventor, provides remote access to environmental parameters. The Wi-Fi-enabled ESP32 facilitates communication with Firebase using MQTT and HTTP protocols for continuous data logging and future analysis. This system is applicable in pollution monitoring, weather forecasting, and disaster prediction, making it a valuable component of smart city infrastructure. Experimental results demonstrate the system's efficiency, reliability, and practicality in real world scenarios. The proposed system is cost-effective, scalable, and energy-efficient, making it suitable for deployment in both urban and rural areas. Future enhancements will integrate machine learning algorithms for predictive analysis and explore a fully solar-powered operation for improved sustainability.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084203 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Tilt Angle Optimization For Bifacial Solar Modules Using Pvsyst Software

(51) International classification	:H02S10/00, H02S50/00, G06F30/20, G06F113/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This project focuses on optimizing the tilt angle of bifacial photovoltaic (PV) solar modules to enhance energy yield under varying climatic and geographical conditions. Bifacial solar panels, capable of capturing sunlight from both front and rear sides, offer improved efficiency compared to traditional monofacial panels. However, their performance is significantly influenced by the tilt angle, ground albedo, and installation configuration. Using PVsyst simulation software, this study evaluates different tilt angles to identify the optimal position that maximizes annual energy generation for a specific location. The simulations consider factors such as solar irradiation, shading, bifacial gain, and reflective surface properties. The results demonstrate that even minor adjustments in tilt angle can lead to substantial improvements in energy output, supporting the need for precise design optimization in bifacial PV installations. This research contributes to sustainable energy solutions by improving the efficiency and economic feasibility of solar power systems. The invention provides a simulation-based method for optimizing the tilt angle of bifacial solar photovoltaic (PV) modules using PVsyst software to maximize energy yield and system efficiency. By importing location-specific meteorological data and simulating various tilt angles, the method identifies the optimal configuration that enhances both front and rear irradiance capture. The invention accounts for parameters such as albedo, module height, azimuth angle, and inter-row spacing. A case study of a 150 kW grid-connected bifacial PV system in Telangana, India demonstrates that tilt angles of 18° to 19° result in maximum energy output and performance ratio. The approach enables more accurate PV design and improved bifacial gain for sustainable solar installations.

No. of Pages : 7 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084204 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Intelligent Bi-Mode Agricultural Rover with Automated Navigation, Precision Irrigation, and Remote Monitoring Using IoT and GPS Technologies

(51) International classification	:G05D0001000000, G06Q0050020000, A01B0079000000, A01G0025160000, A01G0025090000
(31) Priority Document No	:NA
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(33) Name of priority country	:NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention introduces an intelligent agricultural rover designed for dual-mode operation—autonomous and manual—to enhance field productivity through precision agriculture. Controlled by ESP32 and Arduino microcontrollers, the system integrates GPS for navigation, ultrasonic sensors for obstacle avoidance, and a location-triggered irrigation system. In autonomous mode, the rover navigates predetermined paths and waters crops at designated coordinates. Manual mode is enabled via NRF wireless control. An on-board IoT module allows farmers to monitor and command the rover remotely through a web-based interface, offering real-time tracking and operational status. The system aims to reduce labor, save water, and increase efficiency, particularly in Indian agricultural settings. Its modularity and scalability make it suitable for small and large-scale farms.

No. of Pages : 7 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025

(21) Application No.202541084205 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Autonomous Food Serving Robot Using Arduino for Smart Service Applications

(51) International classification	:G05D0001000000, G05B0019418000, G01S0013931000, G01S0015931000, G06V0020580000
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(57) Abstract :
This project develops an autonomous vehicle integrating advanced sensors for obstacle detection and line tracking. Its uses span surveillance, transportation, and logistics. Challenges like unpredictable terrain are addressed through sensor fusion and control algorithms. By integrating sensors and control theory, the vehicle detects obstacles and tracks lines accurately. This project aims to demonstrate sensor-driven autonomous mobility's practicality, enhancing efficiency and safety in diverse industries. The robot navigates by following a black line path using IR sensors and ensures smooth movement through dynamic spaces by detecting and avoiding obstacles using ultrasonic sensors. The food tray is mounted on a stable platform, and a servo motor mechanism is used to control the loading or unloading of food if required. The Arduino microcontroller acts as the brain of the system, processing sensor inputs and controlling motor outputs to ensure accurate path following and obstacle handling. This low-cost, efficient, and scalable robotic solution not only enhances customer service but also promotes hygiene and reduces human intervention in food service processes.

No. of Pages : 7 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025

(21) Application No.202541084206 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Optimizing Three Phase BDLC Motor Control and Industrial Data Acquisition using Lora Wireless Technology

(51) International classification	:H02P6/08, H02P27/06, G05B19/02, H04W4/38, G08C17/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
In modern industrial environments, efficient motor control and real-time data acquisition are essential for ensuring system reliability, performance, and energy efficiency. This project presents a comprehensive solution for optimizing the control of three-phase Brushless DC (BLDC) motors and collecting real-time operational data from single-phase induction motors using LoRa (Long Range) wireless technology. The objective is to enhance operational efficiency, enable predictive maintenance, and support remote monitoring in industrial applications. The three-phase BLDC motor is widely used in automation and precision applications due to its high torque, compact size, and low maintenance requirements. However, precise control is necessary to maximize its performance. In this project, motor optimization is achieved through advanced control techniques such as PID tuning, pulse-width modulation (PWM), and real-time feedback from sensors. These methods adjust speed and torque dynamically based on load conditions, ensuring stable and efficient operation. In parallel, single-phase induction motors are equipped with various sensors to monitor key operational parameters such as temperature, voltage, current, and vibration. These parameters are essential for assessing the health and efficiency of motors, particularly in harsh or remote industrial environments. The data acquired from these sensors is processed using a microcontroller (e.g., ESP32), which also manages the control algorithms for the BLDC motor. The integration of LoRa communication technology offers a robust solution for long-range, low-power wireless data transmission. Unlike traditional short-range wireless systems, LoRa enables continuous monitoring and data transfer over several kilometre’s, making it ideal for large-scale industrial settings. The collected data is transmitted to a centralized gateway or cloud-based server for storage, visualization, and analysis. Alerts and fault notifications can also be generated in case of abnormal conditions, with options for integration via Wi-Fi, Bluetooth, or cloud services. The system includes a display interface for real-time data visualization and is capable of sending alerts and taking automatic actions, such as motor shutdown or triggering maintenance workflows, based on threshold conditions. This architecture not only improves operational safety and efficiency but also reduces downtime and maintenance costs

No. of Pages : 10 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025

(21) Application No.202541084254 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Thermal Conductance of Semiconductor Heterostructures: A Novel Approach to Minimizing Thermal Resistance

(51) International classification	:G16C0010000000, H10N0010010000, B82Y0020000000, G01N0021950000, G06F0119080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract In this work an alternative avenue to improve the thermal conductance across the semiconductor heterointerface was explored by reducing the thermal boundary resistance (TBR) via graded interface nano structuring and phonon bandgap engineering. Si/Ge, GaAs, and MoS_2/h-BN systems were synthesized by MBE, and their thermal properties were studied using TDTR. It was shown that adding compositionally graded interlayers greatly enhanced phonon transmittance, resulting in a 40% decrease in TBR (2.0×10^{-8} m^2K/W to 1.2×10^{-8} m^2K/W) for Si/Ge interfaces, as well as 37% and 36% in GaAs and MoS_2/h-BN systems, respectively. These experimental results were corroborated by molecular dynamics simulations, which revealed an increased phonon density overlap and a strengthened vibrational coupling. The presented features a scalable and process-compatible route to enhance heat removal of nano size devices, rendering it potentially applicable to 3D ICs, optoelectronics, and thermoelectric energy systems.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084262 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Hydraulically Actuated High-Precision Robotic Arm for Microassembly

(51) International classification	:B25J18/00, B25J9/14, B25J9/16, B25J13/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract The invention relates to a hydraulically actuated robotic arm designed for microassembly applications requiring sub-micron precision and controlled force handling. The robotic arm comprises a multi-jointed structure actuated by miniature hydraulic actuators, each governed by a closed-loop control system integrating micro-pumps, precision valves, and pressure sensors for real-time motion regulation. High-resolution position sensors, including optical encoders and laser displacement sensors, provide continuous feedback to maintain exceptional accuracy. Structural components are fabricated from lightweight, low thermal expansion materials and incorporate vibration-dampening elements to reduce resonance during high-speed operations. A modular end-effector assembly allows quick integration of various micro-tools, such as grippers or pick-and-place devices, without recalibration. Adaptive control algorithms incorporating machine learning dynamically optimize actuator response, trajectory correction, and force application. Thermal stability is ensured through micro-channel cooling pathways, enabling consistent operation over extended cycles. Applications include MEMS fabrication, biomedical device assembly, optical alignment, and nano-scale electronic component placement.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084263 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Energy-Efficient HVAC Control System Based on Occupancy Detection

(51) International classification	:F24F11/70, F24F11/62, G06V40/10, F24F120/00, F24F11/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Abstract The invention relates to an intelligent Heating, Ventilation, and Air Conditioning (HVAC) control system that dynamically regulates indoor environmental conditions based on real-time occupancy detection. The system integrates multiple occupancy-sensing technologies, including passive infrared sensors, ultrasonic detectors, and machine learning-based video analytics, to determine the presence, movement, and density of occupants within a designated space. A central control unit processes the occupancy data along with temperature, humidity, and air quality parameters to optimize HVAC operations, thereby reducing energy consumption while maintaining thermal comfort. The system employs predictive algorithms to learn occupancy patterns, enabling pre-conditioning of spaces only when needed. Additionally, the control framework interfaces with smart building automation platforms, allowing for remote access and adaptive energy management. This invention significantly reduces operational costs, minimizes energy wastage, and improves environmental sustainability in residential, commercial, and industrial settings.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084264 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Self-Healing Composite Material for Aerospace Applications

(51) International classification	:B82Y0030000000, C08L0063000000, C08J0005000000, C08K0003220000, B29L0031300000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract The present invention relates to a self-healing composite material for aerospace applications designed to autonomously repair microcracks and structural damage, thereby enhancing safety, durability, and service life. The composite comprises a polymer matrix incorporating reversible covalent bonding chemistry, a plurality of microcapsules containing liquid or reactive healing agents, and nanomaterial reinforcements uniformly dispersed within the matrix. Upon the initiation of a crack, the microcapsules rupture and release the healing agent into the damaged region, where it undergoes in-situ polymerization, sealing the crack and restoring mechanical strength. Simultaneously, the reversible polymer network reforms dynamic bonds to enable multiple healing cycles. Nanomaterials such as graphene or carbon nanotubes improve fracture toughness, thermal conductivity, and allow real-time damage sensing through conductivity changes. The material is compatible with standard aerospace fabrication processes, making it ideal for fuselage panels, wings, rotor blades, and spacecraft structures requiring lightweight, high-performance, and damage-tolerant properties.

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084265 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Wireless Sensor Network for Real-Time Bridge Health Monitoring

(51) International classification	:H04W 84/18, G01M5/00, G01L 1/00, E01D 19/00, H02J 50/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract The invention relates to a Wireless Sensor Network (WSN) for Real-Time Bridge Health Monitoring designed to provide continuous, accurate, and cost-effective structural assessment. The system comprises multiple sensor nodes installed at critical locations on a bridge, each equipped with multi-modal sensing units to measure parameters such as strain, vibration, displacement, and temperature. Sensor nodes incorporate low-power processing units for local data acquisition, filtering, and compression, and are powered by integrated energy-harvesting modules utilizing solar, piezoelectric, or thermoelectric sources. Wireless communication is achieved through a mesh-based network employing low-power protocols to ensure reliable data transfer to a central gateway, which transmits aggregated data to a cloud-based analytics platform. Advanced machine learning algorithms analyze both real-time and historical data to detect anomalies, forecast structural degradation, and issue timely alerts. The system reduces maintenance costs, enhances safety, and enables proactive decision-making for extending bridge service life.

No. of Pages : 16 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084305 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD AND FIBER COUPLING SYSTEM FOR OPTIMIZING OPTIMAL ALGINMENT

(51) International classification	:G02B6/42, G02B6/38
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
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(57) Abstract :
METHOD AND FIBER COUPLING SYSTEM FOR OPTIMIZING OPTIMAL ALIGNMENT ABSTRACT Disclosed is a method for optimizing optical alignment in a fiber coupling system. The method comprises generating first set of angular positions for a first FSM (208) and a second FSM (210) using at least one golden angle; iteratively selecting each angular position from first set of angular positions, for orienting first FSM and second FSM to each of selected angular position to direct free-space optical beam along optical path such that optical beam is optically coupled to an optical fiber; measuring, for each selected angular position, optical power of optical beam is optically coupled to optical fiber; determining whether measured optical power for selected angular position exceeds first pre-defined threshold; performing first search when measured optical power is within first pre-defined threshold; performing second search when measured optical power exceeds first pre-defined threshold; and returning updated first optical power and updated first angular position at which optical beam is optically coupled to optical fiber with highest optical power. FIG. 1

No. of Pages : 40 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084322 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD FOR DETECTING CREDIT CARD FRAUD USING HYBRID DEEP LEARNING MODELS

(51) International classification	:G06Q20/40, G06N3/02, G06N3/0464
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A METHOD FOR DETECTING CREDIT CARD FRAUD USING HYBRID DEEP LEARNING MODELS The present invention relates to a computer-implemented method for detecting fraudulent credit card activities using hybrid deep learning models. The method includes receiving multimodal data comprising transactional, behavioral, and external intelligence (1), preprocessing the data (2), and generating synthetic fraud samples by means of a conditional Generative Adversarial Network (GAN). Sequential transaction behavior is analyzed using a Transformer-based model, while relational links among users, devices, and merchants are modelled with a Graph Neural Network (3). The outputs are dynamically fused (4) through an adaptive ensemble to compute a fraud risk score (5), with thresholds adjusted based on contextual modifiers. The said method further employs federated learning with differential privacy to enable multi-institution collaboration without exposing raw data. An explainability module (6) generates feature-level attributions for flagged transactions. The invention provides scalable, accurate, real-time, and interpretable fraud detection with enhanced data security.

No. of Pages : 18 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084323 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR INTELLIGENT ROUTE OPTIMIZATION

(51) International classification	:G06Q0010047000, H04W0012630000, G01C0021360000, G06N0003080000, G06F0021620000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR INTELLIGENT ROUTE OPTIMIZATION The present disclosure envisages an intelligent route optimization system (100). The system (100) comprises an image acquisition module (102), a hazard detection module (104), a route generation module (106), a reinforcement learning module (108), a decision engine (110), a user interface module (112), and a logging and feedback module (114). The hazard detection module (104) is operatively connected to the image acquisition module (102). The route generation module (106) is operatively connected to the hazard detection module (104). The reinforcement learning module (108) operatively coupled to the route generation module (106). The decision engine (110) operatively coupled to the reinforcement learning module (108). The user interface module (112) is operatively coupled to the decision engine (110). The logging and feedback module (114) operatively connected to the user interface module (112).. The system (100) iteratively improves route selection accuracy across trips based on real-time and historical inputs.

No. of Pages : 38 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/09/2025
(21) Application No.202541084363 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Dynamic Model Integrating Machine Learning and Real-Time APIs for Best Path Prediction

(51) International classification	:G08G1/01, G06N20/00, G06N20/20, G06N5/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Unlike traditional static navigation systems, our approach continuously adapts to real-time inputs without relying on physical IoT hardware. The system fetches live traffic data from TomTom API and weather updates from Open-Meteo API to analyze critical parameters such as congestion levels, road closures, rain, fog, and temperature variations. This real-time data is processed using a Random Forest Classifier algorithm, which operates in two phases: Training Phase: 90% of historical data is used to train the model, allowing it to learn input- output relationships and improve accuracy. Testing Phase: 10% of the data is used to evaluate the model's performance, ensuring reliable and accurate predictions. By leveraging these real-time APIs and advanced machine learning techniques, our system provides dynamic, data-driven route optimization that minimizes travel time and enhances safety. The optimized route is displayed using an interactive mapping tool (Folium in Python), allowing users to visualize the best travel path based on live conditions. This approach offers an efficient, adaptable, and intelligent solution for urban travel, helping commuters navigate with greater confidence while reducing road congestion and travel uncertainties.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084374 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Method for Synthesizing Rose-Shaped Lysozyme and Zinc Phosphate Nanoflowers with Antibacterial and Antibiofilm Activity

(51) International classification	:B82Y5/00, B82Y30/00, B82Y40/00, A61K9/51, A61K33/30, A61K31/315, A61K38/01, A61K38/43
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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3)Mr. Vishnu N V

(57) Abstract :
ABSTRACT: Title: Method for Synthesizing Rose-Shaped Lysozyme and Zinc Phosphate Nanoflowers with Antibacterial and Antibiofilm Activity The present disclosure proposes a method for synthesizing rose-shaped hybrid nanoflowers exhibiting antibacterial and antibiofilm activity. The method involves dissolving lysozyme in phosphate-buffered saline (PBS) at concentrations ranging from 6 mg to 100 mg per 5 mL, followed by the preparation of a zinc precursor solution using zinc acetate dihydrate in deionized water. The zinc solution is added dropwise to the lysozyme solution under continuous stirring, enabling co-precipitation and formation of zinc phosphate ($Zn_3(PO_4)_2$) nanoflowers templated by lysozyme. The mixture is stirred at room temperature for a time period of 3 hr. The synthesized hybrid nanoflowers are collected by centrifugation, washed repeatedly to remove impurities, and lyophilized to obtain a dry powder. The resulting nanoflowers possess a rose-like morphology and demonstrate potent broad-spectrum antibacterial and antibiofilm properties, offering potential for therapeutic, biomedical, and environmental applications.

No. of Pages : 37 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084377 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PLANT-BASED HIGH-PROTEIN FOOD COMPOSITION AND METHOD OF PROCESSING

(51) International classification	:A23L7/10, A23L11/00, A23L25/00, A23L33/10, A23L33/15, A23L33/16, A23L33/185, A23L33/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
PLANT-BASED HIGH-PROTEIN FOOD COMPOSITION AND METHOD OF PROCESSING ABSTRACT OF THE INVENTION
The present invention provides a high-protein, plant-based wheat formulation and methods for producing the same. The process begins with blending the primary protein sources, including wheat gluten, pea protein, oat flour, and gram flour, along with optional seeds, nuts, fibers, hydrocolloids, oils, and nutritional fortifying agents (100). The dry mixture is then hydrated with water or aqueous solutions at a ratio of 1:0.8 to 1:3 (solid:liquid) to form a cohesive protein matrix (101). The hydrated matrix is subsequently subjected to thermal and/or mechanical processing, including baking, steaming, kneading, extrusion, molding, or pressure cooking, at temperatures between 70–150°C for 5–60 minutes to achieve desired firmness and organoleptic properties (102). Finally, the processed matrix is shaped into blocks, cubes, patties, nuggets, or other culinary forms suitable for cooking and storage (103). The final product delivers approximately 62% protein by weight, wherein the final product provides a protein content of 60–65% by weight, 0% cholesterol and sugar, superior texture, and improved digestibility, providing a versatile and nutritionally superior plant-based protein source.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025

(21) Application No.202541084379 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Based Predictive System for Early Diagnosis of Chronic Diseases Using Multimodal Medical Imaging

(51) International classification	:H04N0007180000, G06V0020520000, G08B0013196000, G06N0020000000, G08B0021040000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
AI-powered system for real-time human abnormal event detection in public spaces, designed to enhance safety and security by leveraging artificial intelligence (AI), machine learning (ML), computer vision, and sensor integration. The system continuously monitors human activity in public environments through a network of surveillance cameras and various sensors (thermal, motion, environmental, etc.). It processes the data in real-time, using AI algorithms to detect and analyze abnormal human behaviors or events, such as violent actions, medical emergencies, suspicious activities, crowd disturbances, or environmental hazards. Once an abnormal event is detected, the system triggers real-time alerts to security personnel or emergency responders, enabling rapid intervention. The AI engine employs machine learning models to learn from the data over time, improving its ability to identify potential threats and reduce false alarms. Additionally, the system's integration of cloud and edge computing ensures fast data processing and scalable deployment across a variety of public spaces, including airports, transportation hubs, commercial buildings, and large events. The invention emphasizes privacy protection by focusing on behavior rather than personal identification, complying with privacy regulations such as GDPR. This system provides an innovative, automated solution for enhancing public safety, enabling more efficient monitoring and intervention in dynamic, high-traffic environments.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084380 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR POWER-EFFICIENT SLEEP MODE MANAGEMENT IN EMBEDDED IOT DEVICES

(51) International classification	:G06F 1/3206, H04W 52/02, G06N 20/00, G16Y 40/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
[050] The present invention discloses a system and method for power-efficient sleep mode management in embedded Internet of Things (IoT) devices. The system comprises an adaptive sleep controller, a machine learning prediction engine, and a communication interface to dynamically manage device transitions between active, light sleep, and deep sleep states. The invention introduces a hybrid wake-up mechanism that combines interrupt-driven and predictive scheduling strategies, ensuring immediate responsiveness to critical events while reducing redundant wake-ups. A feedback optimization loop continuously refines prediction accuracy, enabling long-term adaptability across diverse operating environments. The proposed solution achieves significant reductions in power consumption, extends battery life, and is applicable to healthcare monitoring, smart agriculture, industrial IoT, and smart home automation systems. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084384 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENERGY-EFFICIENT VERTICAL FARMING SYSTEM

(51) International classification	:A01G31/06, A01G27/00, A01G9/00, A01K63/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A portable, energy-efficient vertical farming system is disclosed. A compressible GI-sheet frame supports a base fish tank and stacked media-filled grow-beds that function as both plant support and biofilter. A recirculating hydraulic loop continuously converts fish-generated ammonia into plant-available nitrate and returns clarified water to the fish tank, enabling up to ~90% water savings. A solar-assisted power subsystem with battery backup supplies a pump, Wi-Fi microcontroller, sensors (pH, water level, temperature, humidity, ammonia proxy, light; optional NPK and grow-bed moisture), and optional LED grow-lights. The controller executes sensing and control modules for automated operation and user alerts, with a mobile dashboard for real-time monitoring and manual overrides. Representative embodiments demonstrate compact volumes, high turnover rates, robust structural margins, and suitability for leafy greens and tilapia. The system and method deliver dual outputs (plants and fish) with low cost, minimal footprint, and resilient, year-round production for urban and peri-urban users. (Accompanied Figures 1 to 9)

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084398 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENERGY-EFFICIENT CONSENSUS PROTOCOL FOR SUSTAINABLE AND SCALABLE BLOCKCHAIN NETWORKS

(51) International classification	:H04L67/10, H04L9/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
[038] The present invention provides an energy-efficient consensus protocol for blockchain networks, integrating energy-aware node classification, dynamic validation assignment, hybrid cryptographic verification, and an adaptive reward mechanism. Nodes are categorized based on computational capacity, energy availability, and historical reliability, with Primary, Secondary, and Light Validators performing tiered validation tasks. The protocol dynamically adjusts validation responsibilities and rewards based on real-time network conditions and energy metrics, reducing redundant computations and minimizing environmental impact. This invention enables scalable, secure, and sustainable blockchain operations across public, private, and consortium networks, making it suitable for large-scale applications while promoting energy-efficient and environmentally responsible blockchain deployment. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084400 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Adaptive Quantum-Resistant Authentication Framework for Decentralized Research Data Systems

(51) International classification	:G06F21/60, H04L9/40, G06F21/64
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Adaptive Quantum-Resistant Authentication Framework for Decentralized Research Data Systems Abstract The invention discloses an Adaptive Quantum-Resistant Authentication Framework for Decentralized Research Data Systems, designed to ensure long term security, integrity, and trustworthiness of sensitive research information in distributed environments. Existing cryptographic methods face vulnerability against quantum computing attacks, while conventional decentralized architectures struggle with scalability, real-time adaptability, and multi-party trust verification. The proposed framework integrates post-quantum cryptographic algorithms, lattice-based and hash-based schemes, with an adaptive authentication layer that dynamically adjusts security parameters according to network load, user behaviour, and threat level. It employs multi factor decentralized identity (DID) management using block chain or distributed ledger technology, ensuring tamper-proof logging of authentication events. A context-aware trust engine evaluates user/device legitimacy through behavioural analytics, anomaly detection, and zero-knowledge proofs, thereby mitigating unauthorized access. Furthermore, the system introduces a resilient key rotation and distribution mechanism that operates seamlessly across decentralized nodes, ensuring forward secrecy and backward compatibility. The adaptive framework optimizes computational efficiency, reducing authentication latency by up to 35% compared with conventional post-quantum methods, while maintaining over 97% accuracy in anomaly detection. This invention provides a robust, scalable, and future-proof authentication framework that secures research data against emerging quantum threats, supports real-time decentralized collaboration, and strengthens compliance with international data security standards.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084407 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR DETECTING AIR QUALITY

(51) International classification	:G01N 15/06, G01N33/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR DETECTING AIR QUALITY The present invention relates to a method and a system for detecting air quality. The method includes steps of, calibrating an air quality sensor in accordance with one or more compounds present in the air in the vicinity. Further, the method includes the step of detecting levels of the one or more compounds in the air using the calibrated air quality sensor. Furthermore, the method includes the step of generating data pertaining to the detected levels of the one or more compounds. Thereafter, the method includes the step of generating, an output pertaining to the air quality based on the generated data and transmitting, the generated output to the one or more devices via the interface. Ref. Fig. 2d

No. of Pages : 35 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084427 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Deep Learning and Clinical Rule Engine Framework for Early Detection and TNM Staging of Kidney Tumors from Tomography and Radiology Information Data

(51) International classification	:G16H0050200000, G16H0050700000, G06N0003080000, G16H0010600000, G16H0030200000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Dr. Santosh Kumar Henge

(57) Abstract :
The present invention discloses a hybrid framework integrating deep learning with clinical rule engines for early detection of kidney tumors, particularly iso-intense renal masses, and for TNM staging using tomography and radiology information data. The system addresses the limitations of conventional radiology and standalone AI approaches, which are often biased toward later-stage tumor detection. By combining deep learning sensitivity with rule-based interpretability, the invention ensures accurate, early detection and explainable staging. It integrates seamlessly with radiology information systems, providing clinicians with a reliable decision-support tool to improve diagnosis and treatment outcomes

No. of Pages : 10 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084489 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD OF SECURE INTEGRATED SENSING AND COMMUNICATION USING MULTIPLE INPUT MULTIPLE OUTPUT (MIMO) RADAR SYSTEM

(51) International classification	:H04B7/06, H04B7/0413, G01S7/42, G01S13/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A METHOD OF SECURE INTEGRATED SENSING AND COMMUNICATION USING MULTIPLE INPUT MULTIPLE OUTPUT (MIMO) RADAR SYSTEM A method and a system provide a secure integrated sensing and communication using the MIMO system. A unique method and an integrated sensing and communication base station (ISAC) system is designed for generating a waveform suitable for both reliable radar target detection and secure communication simultaneously on the same bandwidth. According to an embodiment, a concept of index modulation for embedding information securely on a multiple input multiple output (MIMO) radar waveform is being utilized. According to an embodiment, a precoder is designed at the transmitter side of the MIMO radar such that only one out of multiple orthogonal waveforms are received at a legitimate communication user depending on what information bit sequence one wants to convey. Thereby providing a secure way of communication. FIG. 5

No. of Pages : 55 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084490 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM FOR VEHICLE IGNITION CONTROL USING RFID AND BIOMETRIC FINGERPRINT AUTHENTICATION

(51) International classification	:G06V0040130000, G06F0021320000, H04L0009400000, G07C0009000000, G06K0019070000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A SYSTEM FOR VEHICLE IGNITION CONTROL USING RFID AND BIOMETRIC FINGERPRINT AUTHENTICATION The invention discloses a dual-factor vehicle ignition security system integrating RFID tag verification and biometric fingerprint recognition under a microcontroller. An RFID reader first authenticates a registered 12-digit tag; upon success, a fingerprint sensor acquires and matches the user's fingerprint. Only when both verifications pass does the controller actuate the ignition circuit; in the prototype a DC motor emulates the starter, with relay-based ignition control suitable for production integration. The sequential validation mitigates risks from key duplication and single-layer bypass while remaining scalable for commercial vehicles. Optional enhancements include GSM alerts for failed attempts, GPS tracking for continuous location monitoring, and a mobile interface for remote access and user management, enabling a comprehensive, intelligent automotive access-control platform.
No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084576 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “A fluorescence-based dual-ion sensing system and a method for detecting Hg^{2}? and Pd^{2}? ions”

(51) International classification	:C09K11/65, B82Y40/00, C01B32/15, G01N21/64, C09K11/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a chiral carbon dot-based fluorescence sensor system (100) for the selective and sensitive detection of Hg^{2+} and Pd^{2+} ions via a reversible “On-Off-On” fluorescence mechanism. The system comprises chiral carbon dots (101) synthesized via hydrothermal treatment of citric acid (102), ethylenediamine (103), and a chiral precursor (104) selected from L-tartaric acid (104a) or D-tartaric acid (104b), under controlled conditions of 180°C for 5 hours. The resulting L-CDs (101a) and D-CDs (101b) exhibit strong intrinsic fluorescence under 360 nm excitation (105), which is selectively quenched upon exposure to Hg^{2+} or Pd^{2+} ions (106). Subsequent addition of L-Cysteine (107) restores fluorescence by chelating and removing the metal ions from the carbon dot surface. The sensor system supports multiphase detection formats including liquid-phase (111), paper strip-based (112), and hydrogel-embedded (113) platforms. This invention enables portable, highly selective, and reversible detection of mercury and palladium ions, offering significant utility in environmental monitoring, point-of-care diagnostics, and chemical sensing applications. Fig 1 to 20

No. of Pages : 24 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084577 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PISTA SHELL EXTRACT BASED ANTI-AGING CREAM AND METHOD OF PREPARATION THEREOF

(51) International classification	:A61Q19/08, A61K8/02, A61K9/06, A61K8/18, A61K8/92, A61K8/97, A61K47/44, A61K47/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The invention relates to a natural anti-aging skincare composition and method of preparation thereof. The method (100) includes preparing an aqueous phase with glycerin and ethylenediaminetetraacetic acid (EDTA), preparing an oil phase with almond oil (Prunus dulcis), stearic acid, cetyl alcohol, beeswax (Cera alba), and tocopherol, emulsifying the two phases at 70–75 °C, stabilizing with triethanolamine, cooling at 35- 45 °C, and incorporating pista shell extract from Pistacia vera, essential oil, and preservative to yield a cream composition (102). The cream demonstrates strong antioxidant activity, tyrosinase inhibition, microbial safety, and stability with desirable spreadability and texture. In some embodiments, activated charcoal is optionally included to provide detoxification and skin-brightening benefits.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084584 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYNTHESIS OF NANO STRUCTURED METAL OXIDE COMPOUNDS FOR SUPERCAPACITOR APPLICATIONS

(51) International classification	:H01G0011860000, B82Y0030000000, H01G0011300000, H01G0011240000, H01M0010052500
(31) Priority Document No	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present disclosure discloses a system (100) and a method for synthesizing nanostructured metal oxides for supercapacitor applications. The system (100) comprises a precursor preparation module (102) configured to mix at least two metal oxide precursors in predetermined ratios, a microwave-assisted synthesis module (104) configured to subject the precursors to controlled microwave irradiation for nanostructure formation, and a material post-processing module (106) configured to perform grinding, calcination, and filtration to obtain a uniform powdered nanostructured compound. A characterization and testing module (108) is configured to analyze morphology, crystallinity, chemical bonding, electrochemical activity, and cyclic stability of the nanostructured compound. A supercapacitor electrode fabrication module (110) is configured to integrate the synthesized compound into electrodes, and an application integration module (112) is configured to validate the electrodes in supercapacitor devices. The disclosure enables faster, energy-efficient synthesis of nanostructured materials with improved capacitance, high cyclic stability, and scalability for energy storage applications.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025
(21) Application No.202541084635 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN ELECTROCATALYST AND ELECTROCHEMICAL SPLITTING OF AMMONIA

(51) International classification	:C22B0015000000, H01M0004920000, C25B0011091000, C22B0003000000, B01J0023755000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT AN ELECTROCATALYST AND ELECTROCHEMICAL SPLITTING OF AMMONIA The present disclosure provides a sulfur-doped nickel-copper (S-NiCu3) electrocatalyst, comprising: a. a nickel sulfide (Ni17S18) phase; b. an anilite (Cu7S4) 5 phase; and c. a chalcocite (Cu2S) phase. The present disclosure further provides a process for preparing the sulfur-doped nickel-copper (S-NiCu3) electrocatalyst, and an electrode. The present disclosure also provides a sulfur-doped nickel-copper (S-NiCu3) electrocatalyst obtained by a process, an electrode, and a process for electrochemical splitting of ammonia.

No. of Pages : 46 No. of Claims : 39

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/09/2025

(21) Application No.202541084655 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Ready-to-Use, Stable formulation of Lacosamide Injection and Method thereof

(51) International classification	:A61K9/08, A61K31/16, A61K31/165, A61K47/26, A61K47/02, A61P29/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)Derfla Alfred

(57) Abstract :
According to an embodiment of the present disclosure, a ready-to-use room temperature stable, isotonic, Lacosamide injection suitable for intravenous infusion administration without the need for any further dilution prior to administration, comprising a lacosamide concentration between 0.5 mg/mL to 5 mg/mL, a buffering agent to maintain the pH between 3.5 to 5 is provided. The proposed formulation of the present disclosure is stabilized through inclusion of a buffer, preferably a citrate buffer and the claimed formulation is suitable for terminal sterilization by autoclaving process.

No. of Pages : 26 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025

(21) Application No.202541084672 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Intelligent Multi-Layered Data Orchestration Framework for Adaptive IT Infrastructure Management

(51) International classification	:G06F9/50, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)R.Divya
7)Mr.C.Mathankumar

(57) Abstract :
Intelligent Multi-Layered Data Orchestration Framework for Adaptive IT Infrastructure Management Abstract The exponential growth of enterprise-scale IT infrastructure has created significant challenges in managing heterogeneous resources, ensuring real-time adaptability, and achieving optimized service delivery. This paper proposes an Intelligent Multi-Layered Data Orchestration Framework designed to streamline infrastructure management by integrating advanced analytics, adaptive decision making, and automated orchestration techniques. The framework employs a hierarchical, multi-layered architecture that classifies and processes data across infrastructure, application, and service layers, enabling seamless coordination and interoperability. Machine learning–driven intelligence is embedded within each layer to dynamically analyze workload patterns, predict anomalies, and adapt resource allocation strategies. The framework emphasizes accuracy through predictive modeling that reduces false alarms and enhances incident detection. By leveraging real-time orchestration mechanisms, the system achieves high performance in workload balancing, fault tolerance, and service continuity. Automated feedback loops ensure consistent improvements in decision accuracy and system efficiency, minimizing energy consumption and operational costs. Moreover, the multi-layered approach enhances output quality by aligning infrastructure resources with dynamic user and application demands, thus supporting business continuity and scalability. Experimental evaluation across simulated enterprise environments demonstrates that the proposed framework outperforms conventional infrastructure management systems by reducing latency, improving throughput, and achieving significant gains in efficiency. The orchestration layers provide modular adaptability, allowing organizations to evolve their IT infrastructure in response to fluctuating workloads and emerging technologies. Overall, this framework establishes a foundation for next-generation adaptive IT infrastructure management with improved reliability, agility, and sustainability.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084684 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ARECA NUT FIBER REINFORCED COMPOSITE BOARDS FOR ENHANCED ACOUSTIC INSULATION

(51) International classification :G10K11/172
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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3)B Shravan Kumar
4)D Sri Harsha

(57) Abstract :
The present invention relates to a composite board for acoustic insulation, comprising areca nut natural fibers reinforced within a polymeric resin matrix. The inventive board is a single-medium structure that provides broadband acoustic insulation across low and high frequencies, without reliance on perforations, porous structures, or multi-layered assemblies common in the prior art. The areca nut fiber composite exhibits enhanced sound absorption and dampening properties while maintaining superior structural integrity and dimensional stability. Fabricated via a simple and cost-effective hand lay-up process, the invention utilizes an abundant agricultural by-product to provide an environmentally sustainable and biodegradable alternative to conventional synthetic and mineral-based acoustic materials, offering 2-3 times higher performance at higher frequencies (4000 Hz) compared to other agricultural fiber-based boards.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084693 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT SECURITY ORCHESTRATION SYSTEM EMPLOYING MULTI-LAYERED MACHINE LEARNING FOR BEHAVIORAL THREAT PATTERN RECOGNITION

(51) International classification	:G06F21/55, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
An intelligent security orchestration system employing multi-layered machine learning for behavioral threat pattern recognition is disclosed. The system comprises a data ingestion layer collecting security data from network traffic analyzers, endpoint detection systems, SIEM platforms, and threat intelligence feeds; a multi-layered machine learning engine having supervised learning modules using Random Forest and SVM algorithms, unsupervised learning modules employing K-means and DBSCAN clustering, reinforcement learning modules implementing Q-learning algorithms, and deep learning modules utilizing CNN and LSTM networks; a behavioral analysis unit establishing baseline profiles and detecting anomalous deviations; a threat correlation engine identifying coordinated attack patterns across temporal dimensions; and an automated response orchestration unit executing containment and mitigation strategies. The system processes security events through multiple machine learning layers to identify both known and unknown threats, correlates individual events to detect advanced persistent threats, and automatically orchestrates coordinated responses across integrated security platforms.

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025

(21) Application No.202541084695 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System for Autonomous Vehicular Surveillance and Regulation - VAAHAN

(51) International classification	:G08G1/054, G08G1/017, G08G1/052, G08G1/01, G08G1/04, G06V20/56
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)K.S Rasika
9)K.Harini Shree

(57) Abstract :
Disclosed is an Intelligent Vehicular Surveillance System for Smart Environments (100) that includes a vehicle-mounted control unit (200), a roadside enforcement unit (300), and a central monitoring station (110), communicatively coupled via LoRa-based wireless communication. The vehicle-mounted control unit (200) comprises an image acquisition unit (202), edge sensors (102), an edge processing unit, and a LoRa transceiver (204) configured to capture rider and vehicle parameters, including helmet usage and speed, and transmit violation data. The roadside enforcement unit (300) incorporates a GPS geofencing module (301) and a LoRa gateway (303) to enforce speed limits, helmet compliance, and access control in semi-regulated zones such as school areas, industrial campuses, gated communities, and smart corridors. The central monitoring station (110) receives and processes data for storage, analysis, and enforcement actions. The present disclosure also relates to a method for AI-enabled, edge-computing-based monitoring and decentralized, cloud-independent enforcement using long-range, low-power LoRa communication in areas with limited or intermittent connectivity.

No. of Pages : 21 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084712 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Variational Iteration Method with Adaptive Error Control for Nonlinear Dynamic System Simulation

(51) International classification	:G06F0017130000, G05B0013020000, H03H0021000000, H04L0009000000, G06F0030230000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The Variational Iteration Method (VIM) has emerged as a powerful analytical technique for solving nonlinear differential equations, but its conventional implementation often suffers from slow convergence and uncontrolled approximation errors when applied to complex dynamic systems. To address these challenges, this work proposes an enhanced Variational Iteration Method with Adaptive Error Control (VIM-AEC) for the accurate and efficient simulation of nonlinear dynamic systems. The proposed approach introduces an adaptive correction functional that incorporates local residual-based error estimators, enabling dynamic adjustment of iteration parameters to minimize truncation and convergence errors. Unlike traditional VIM, which applies a fixed correction process, the adaptive framework continuously monitors solution accuracy and automatically adjusts the iteration step size and Lagrange multipliers to achieve rapid convergence with guaranteed precision. The method is particularly well-suited for strongly nonlinear, stiff, and chaotic dynamic systems, where conventional numerical solvers may either fail or require high computational cost. Numerical experiments on benchmark nonlinear oscillators, predator-prey dynamics, and chaotic attractors demonstrate that VIM-AEC outperforms classical VIM and standard numerical integration methods in terms of stability, computational efficiency, and accuracy.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084714 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Evaluation of therapeutically potential of bio-resources from marine samples

(51) International classification	:C12Q0001688800, C12Q0001687600, G06V0020690000, C12Q0001180000, C12Q0001200000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract: The present invention is an evaluation of therapeutically potential of bio-resources from marine samples. High-throughput cultivation works by simulating natural processes and it gets rid of undesirable, rapidly expanding bacteria and makes room for uncommon, delicate actinomycetes. To isolate actinomycetes using marine sponge along with sediment samples, this review thoroughly examines both conventional and novel methods and approaches, Thiruchendur sea water specimens from Tamil Nadu were used to isolate active marine actinimycetes in this research. A using colony morphology, culture traits, mycelial traits, and physiological characterization, the specimens collected have been repeatedly diluted to identify the active organism and a seven unique actinomycetes were pulled out of the water samples. A molecular characterization, antimicrobial sensitivity testing, and crude compound extraction were some of the subsequent analyses that made use of the strains thereby, a seven unique actinomycetes were pulled out of the water samples.

No. of Pages : 6 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202541084718 A
(19) INDIA
(22) Date of filing of Application :06/09/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : "Remote-Controlled Solar Agricultural Sprayer with Onboard Power System"

(51) International classification	:A01M7/00, F03G6/00, B05B13/00, B05B15/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The proposed project presents the design and implementation of a solar-powered, remote-controlled agricultural sprayer vehicle aimed at promoting sustainable and efficient pesticide or fertilizer application in farming practices. This innovative system integrates renewable energy and wireless control to assist farmers in reducing manual labor, minimizing chemical exposure, and enhancing field coverage. The system is divided into two key modules: a handheld remote control unit and an autonomous sprayer vehicle. The remote unit is equipped with a joystick, an Arduino Nano, and an NRF24L01 transceiver module to wirelessly transmit directional and spray control signals. The vehicle unit features an Arduino Uno as the central controller, which processes incoming commands and operates DC motors via a motor driver module for movement and a relay module to activate the spraying mechanism. A solar panel, connected to a solar charge controller, powers a rechargeable battery, enabling the vehicle to operate entirely on solar energy. This self-sustaining power system eliminates the need for external charging and ensures field operability in remote areas. The sprayer is driven by a 12V DC pump and nozzles, allowing targeted and uniform spraying across crops. This system demonstrates a low-cost, eco-friendly, and scalable solution for modern precision agriculture. Its modularity allows for future integration of sensors (e.g., obstacle detection or soil moisture sensing) and semi-autonomous control. The project highlights the potential of combining IoT, embedded systems, and clean energy to revolutionize conventional farming techniques.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084719 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Biogenesis of copper nanoparticles using seagrass Enhalus acoroides (L.F) Royle: antioxidant, anti-inflammatory and antibacterial activities

(51) International classification	:B82Y30/00, B82Y40/00, A61P31/04, A61P29/00, C01G3/00, B22F9/16, B22F1/054, B22F9/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract: The present invention is a biogenesis of copper nanoparticles using seagrass Enhalus acoroides Royle: antioxidant, anti-inflammatory and antibacterial activities. Fourier transform infrared spectroscopy, the plant extract's capping agents and the groups of molecules tasked with transforming copper ions into copper nanoparticles have been determined. A size range of 22-30 nm, the SEM picture clearly showed the sponge-like structure of the EA-CuNPs. An EDAX spectra have verified the presence of oxygen and copper elements thereby, a crystalline EA-CuNPs with a mean dimension of 22.10 nm were revealed by the XRD results. A surface roughness was settled using the AFM technique and an EA-CuNPs exhibited antioxidant and anti-inflammatory characteristics. An antibacterial activity towards Streptococcus faecalis and Bacillus thuringiensis is rather strong in the EA-CuNPs that are produced. First to learn that seagrass extract from Enhalus acoroides has ever been used to make copper nanoparticles.

No. of Pages : 6 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025

(21) Application No.202541084726 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART PANTRY WITH THE PERISHABLE ITEM TRACKING

(51) International classification	:G06Q0010087000, G06T0011000000, B62B0003140000, G06F0003120000, H04N0021422300
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Traditional refrigerators do not provide users with a convenient way to track grocery inventory/spoilage when shopping, often resulting in forgotten or duplicate purchases. The present invention introduces a smart pantry system equipped with sensors to monitor food items and display their availability through a detachable tab. The tab, which shows categorized items with color-coded indicators, can be removed and carried by the user to the supermarket, providing real-time reference to household inventory. Data collected by the smart pantry sensors is transmitted to a local hub and synchronized with a cloud platform, ensuring that the detachable tab remains updated. This system reduces food waste, improves grocery planning, and enhances user convenience by integrating everyday appliances into a smart, connected ecosystem.

No. of Pages : 21 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025

(21) Application No.202541084727 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Intelligent IoT-based automation for resilient environmental monitoring in mountain agriculture

(51) International classification	:H04W 84/18, H04W 40/22, G01D 21/02, G16Y 40/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract: The system leverages LoRa (Long Range) technology in a mesh network configuration to overcome the limitations of conventional wireless solutions, such as limited range and power consumption, particularly in hilly or mountainous terrain. The architecture consists of battery-powered sensor nodes, each equipped with a microcontroller and an RF transceiver to collect environmental data from sensors like temperature, humidity, and soil moisture. These nodes are autonomously powered by a solar panel and battery pack. Data from the sensor nodes is transmitted through the mesh network to a central gateway, which utilizes a microcontroller with a Wi-Fi module. This gateway relays the data to a cloud-based platform, such as Blynk, Firebase, or a custom web app, for real-time monitoring and analysis. The self-organizing and low-power nature of the LoRa mesh network ensures continuous and reliable data flow, enabling precision agriculture and informed decision-making for sustainable farming practices in remote and rugged environments.

No. of Pages : 7 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084731 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Multi-Mode Programmable Valve Controller for Efficient Liquid Flow Distribution in Utility Systems

(51) International classification	:G05B19/04, G05D7/00, F16K31/00, F16K21/00, E03C1/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract: The invention provides a multi-mode, programmable valve controller for efficient and automated control of fluid flow in both domestic and industrial applications. The system integrates a flow meter, timer, and microcontroller to operate a gate valve actuator. It supports volume-based and time-based operation modes for applications such as soaking food grains (like rice and dall) or automated water tank filling. Designed with portability and universal fittings, it enables easy installation across different environments and helps minimize water wastage and optimize usage in areas with metered water supply.

No. of Pages : 6 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084745 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Mathematical Exploration of Fractional Difference Equations with Nonlocal Boundary Conditions: Novel Fixed-Point Techniques and Stability Results

(51) International classification	:G06F0017130000, G06F0017100000, H03L0007197000, G06N0003063000, G06N0007010000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract We consider fractional difference equations (FDEs) with nonlocal boundary conditions and exhibit new fixed-point approaches to stability analysis. The result intended to obtain methods for the solution of the equations and the stability analysis of the solutions. A fixed-point iterative process was adopted, and convergence analysis showed it was convergent and efficient to obtain numerical solutions to realistic models such as prey and predator dynamics and population growth. To study the stability and dynamical behaviour of the model, the fractional orders α=0.2, 0.5, and 0.8 were used, and the results show that larger fractional orders produced less oscillation and stronger memory characteristics of the system. Linear stability analysis revealed stability of equilibrium solutions; those perturbations decayed exponentially became evident; the stability was greater for larger α\alpha. The influence of various kernel functions in nonlocal boundary conditions was also investigated, and it was found that exponential kernels resulted in a faster system stabilization. In general, the paper provides a successful approach for solving fractional difference equations with nonlocal boundary conditions, and the novel concepts may be applied in biology, economics, and engineering.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084753 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : In vitro evaluation of B12 activity of crude extract from extremophilic microbe

(51) International classification	:C12N0009880000, C12N0009040000, G01N0021310000, C12Q0001220000, C12Q0001320000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT In vitro evaluation of B12 activity of crude extract from extremophilic microbe The present invention provides a method for evaluating the in vitro bioactivity of vitamin B_{12} extracted from Pseudomonas alcaliphila using glycerol dehydratase (GD) and diol dehydratase (DD) as biological indicator enzymes. The method comprises preparing a reaction mixture containing 1,2-propanediol, potassium phosphate buffer, magnesium chloride, ATP, NADH, and yeast alcohol dehydrogenase (yADH), followed by the addition of a crude or purified vitamin B_{12} extract and initiation of the enzymatic reaction by adding a glycerol dehydratase (GD) or diol dehydratase (DD) enzyme preparation. The activity of vitamin B_{12} is measured indirectly by monitoring the decrease in NADH concentration at 340 nm using a UV spectrophotometer. Figure.1

No. of Pages : 27 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084757 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BRAIN-COMPUTER INTERFACE SYSTEM FOR ENHANCED ASSISTIVE COMMUNICATION DEVICES

(51) International classification	:G06F3/01, A61B5/72, G06N3/0464, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
[042] The present invention discloses a Brain-Computer Interface System for Enhanced Assistive Communication Devices that enables individuals with speech or motor impairments to communicate efficiently and naturally. The system integrates non-invasive neural acquisition, adaptive machine learning for intent classification, and predictive natural language processing to convert brain signals into meaningful words, phrases, or sentences. It features low-latency signal processing, multimodal feedback, modular integration with various assistive devices, and secure cloud-based model personalization. The invention provides an adaptive, user-friendly, and scalable solution that enhances communication independence and quality of life for users with severe communication limitations. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084758 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENERGY-EFFICIENT EDGE COMPUTING FRAMEWORK FOR LOW-POWER IOT DEVICES

(51) International classification	:H04L67/10, G06F9/50, H04L67/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
[038] The present invention discloses an energy-efficient edge computing framework for low-power IoT devices. The framework comprises IoT devices, edge nodes, and cloud servers, and incorporates adaptive task scheduling, energy profiling, lightweight data compression, and prioritization mechanisms to optimize computational load and reduce energy consumption. Tasks are dynamically allocated between devices, edge nodes, and cloud servers based on device battery levels, processing requirements, network conditions, and latency constraints. The framework further includes intelligent load distribution and lightweight cryptographic methods to ensure reliable, secure, and low-latency operation. The invention is suitable for diverse IoT applications, including healthcare monitoring, smart homes, industrial automation, and environmental sensing, providing extended device lifetime, improved system efficiency, and secure data management. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202541084764 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR INTRUSION DETECTION USING HYBRID ARTIFICIAL INTELLIGENCE MODELS

(51) International classification	:G06F21/55, G06F21/62, H04L41/16, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Mr. M. Thiyagarajan

(57) Abstract :
[042] The present invention relates to a system and method for intrusion detection using hybrid artificial intelligence models. The system integrates rule-based filtering, supervised and unsupervised machine learning classifiers, and advanced deep learning architectures in a multi-tier framework to detect malicious activities, unauthorized access, and anomalous network behavior. A decision fusion module consolidates outputs from multiple AI models to improve detection accuracy and minimize false positives, while an explainable AI module provides interpretable insights for security analysts. The system further incorporates a feedback-driven adaptive learning loop, enabling continuous model updates to address evolving cyber threats. The invention is scalable and deployable across enterprise networks, cloud infrastructures, IoT ecosystems, and hybrid environments, providing real-time, accurate, and transparent intrusion detection. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/09/2025
(21) Application No.202541084787 A
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(54) Title of the invention : ML-BASED PLATFORM FOR STUDENT COLLABORATION AND KNOWLEDGE SHARING TO ENHANCE ACADEMIC PERFORMANCE IN HIGHER EDUCATION

(51) International classification	:G06Q50/20, G06Q50/00, G06N20/00, G06N3/084
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ML-Based Platform for Student Collaboration and Knowledge Sharing to Enhance Academic Performance in Higher Education is the proposed invention. The proposed invention focuses on understanding the functions of Student Collaboration and Knowledge Sharing. The invention focuses on analyzing the parameters of Academic Performance in Higher Education using algorithms of Machine Learning Approach.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/09/2025
(21) Application No.202541084788 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT ENERGY MANAGEMENT ARCHITECTURE FOR SMART CITIES USING AI-ENHANCED VLSI SYSTEMS

(51) International classification	:H04W0012060000, H04L0009400000, B60L0050300000, G06F0040279000, H04N0021422000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Intelligent Energy Management Architecture for Smart Cities Using AI-Enhanced VLSI Systems is the proposed invention. The proposed invention focuses on understanding the functions of AI-Enhanced VLSI Systems. The invention focuses on analyzing the parameters of Intelligent Energy Management Architecture for Smart Cities using algorithms of Artificial Intelligence Approach.
No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/09/2025
(21) Application No.202541084798 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR PREDICTIVE MAINTENANCE IN MANUFACTURING USING BIG DATA ANALYTICS

(51) International classification	:G06Q10/20, G06Q50/04, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
[049] The present invention discloses a system and method for predictive maintenance in manufacturing using big data analytics. The system collects real-time data from IIoT sensors, PLCs, SCADA systems, and enterprise databases, stores it in distributed and time-series databases, and applies advanced machine learning algorithms to detect anomalies and predict potential equipment failures. A decision support interface provides real-time dashboards, alerts, and recommended maintenance actions, while a feedback mechanism continuously retrains predictive models to improve accuracy. The invention enhances equipment reliability, reduces unplanned downtime, optimizes maintenance scheduling, and extends the operational lifespan of manufacturing assets. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/09/2025
(21) Application No.202541084799 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Innovative Research and Development Model for Physics-Driven Sustainable Technologies

(51) International classification	:G06Q10/0637, G06F30/27, G05B13/04, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Innovative Research and Development Model for Physics-Driven Sustainable Technologies Abstract The accelerating demand for sustainable technologies necessitates innovative research frameworks that integrate physics-driven principles with practical applications. This paper proposes an Innovative Research and Development (R&D) Model for Physics-Driven Sustainable Technologies, designed to systematically translate fundamental physical concepts into scalable, eco-friendly solutions. The proposed model emphasizes a multi-layered approach encompassing theoretical modeling, simulation-based validation, experimental prototyping, and iterative optimization. By leveraging physics-based insights, the framework enables precise prediction of material behaviors, energy conversion efficiencies, and system-level performance under real-world conditions. Key features include adaptive design strategies, modular experimentation protocols, and a feedback-driven optimization loop, ensuring continuous improvement while minimizing resource consumption. The model also integrates interdisciplinary collaboration across material science, thermodynamics, renewable energy systems, and nanotechnology, fostering innovation in domains such as energy harvesting, efficient storage systems, and low-carbon industrial processes. Preliminary case studies demonstrate its effectiveness in accelerating prototype development, reducing time-to-market, and enhancing sustainability metrics. Comparative analysis with conventional R&D practices highlights significant improvements in energy efficiency, material utilization, and lifecycle sustainability. The proposed model is adaptable to emerging challenges in climate-resilient technologies and can guide policy decisions for sustainable innovation. By formalizing a structured, physics-informed R&D pathway, this work contributes to bridging the gap between theoretical research and industrial implementation, promoting environmentally responsible technological advancement. Future work includes integration with AI-driven predictive modeling to further enhance design accuracy and resource optimization.

No. of Pages : 14 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/09/2025
(21) Application No.202541084801 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR OPTIMIZED CNC MACHINE TOOL PATH PLANNING TO REDUCE TOOL WEAR

(51) International classification	:G05B19/404, G05B19/18, G05B19/19, B23Q15/00, B23Q23/00, B23Q17/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
[042] The present invention discloses a system and method for optimizing CNC machine tool paths with the objective of reducing tool wear and enhancing machining efficiency. The system comprises a predictive modeling module that estimates cutting forces, thermal effects, and tool wear progression, an optimization engine that employs hybrid algorithms to generate wear-aware tool paths, and a feedback integration module that adapts machining parameters in real time based on sensor data such as spindle load, vibration, and temperature. The invention produces optimized G-code incorporating adaptive feed rates, spindle speeds, and tool engagement strategies, thereby distributing cutting forces uniformly and minimizing localized stress concentrations. Unlike conventional CAM strategies that rely on static rules, the proposed invention combines predictive analytics, adaptive path planning, and closed-loop control to extend tool life, improve surface finish, reduce downtime, and lower operational costs. The invention is applicable across various CNC machining operations and supports Industry 4.0 smart manufacturing ecosystems. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/09/2025
(21) Application No.202541084812 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DOC TRACKER

(51) International classification	:A61B5/00, G16H50/20, G06N20/00, G16H15/00, G16H40/20, G16H80/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
DocTracker is a real-time healthcare documentation and monitoring system designed to enhance clinical workflows and patient outcomes through intelligent automation. Built on a robust Spring Boot backend, it integrates biosignal acquisition, machine learning–driven diagnostics, and secure multi-role access to streamline medical data management across institutions. The platform enables seamless tracking of patient vitals, appointment histories, and diagnostic trends, while ensuring data integrity and privacy. With its scalable architecture and intuitive interface, DocTracker empowers healthcare professionals to make timely, informed decisions—especially in resource-constrained environments—bridging the gap between frontline care and digital innovation.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541084939 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT PROXIMITY AUTONOMOUS DEFENSE SYSTEM

(51) International classification	:A61B0005000000, H04L0009400000, G06V0020580000, G06F0018250000, G06N0003080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Dr. R. Senthilkumar

(57) Abstract :
This project involves the development of an Intelligent Proximity Autonomous Defense System capable of detecting obstacles within a 1-meter range and automatically neutralizing them through a built-in shooting mechanism. The system functions without human intervention by using proximity sensors, such as ultrasonic or infrared, to continuously scan its surroundings. When an object is detected within the defined range, the system processes the information through a microcontroller, locks onto the target, and activates the firing mechanism. This real-time detection and response highlight the principles of autonomous decision-making and precision targeting. The robot demonstrates how embedded systems, sensor integration, and actuator control can work together to simulate an effective short-range defense mechanism. The project is designed as a functional prototype suitable for applications in automated surveillance, military training robots, robotics competitions, and close-combat simulations. It offers a safe and controlled approach to simulate threat detection and response, making it ideal for demonstration purposes. Future improvements may include features such as object classification, adaptive targeting, and wireless monitoring. Overall, this project showcases the growing role of intelligent robotics in enhancing automation and security, providing a compact and efficient solution for short-range autonomous defense operations.

No. of Pages : 7 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541084945 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PROTECTION AND CONTROL OF THREE PHASE INDUCTION MOTOR USING MICROCONTROLLER

(51) International classification	:H02H7/08, H02H7/085, H02H7/09, H02H3/253, G05B19/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Dr. G. Sundar

(57) Abstract :
This project presents the design and development of a three-phase induction motor protection and control system using a microcontroller. The aim is to ensure the safe and efficient operation of the motor by continuously monitoring the voltage and current of all three phases. The system is capable of automatically turning the motor ON and OFF based on user input or fault conditions. One of the major faults in three-phase systems is phase loss, commonly known as single phasing. In such cases, the motor may continue running under unbalanced load, which can lead to overheating and damage. To prevent this, the microcontroller detects any phase failure and immediately switches off the motor. The system also identifies and displays the specific missing phase (R, Y, or B) on an LCD screen, providing clear fault diagnosis to the user. In addition to fault detection, the system continuously displays the real-time voltage of each phase and the current drawn by the motor. If the current exceeds a predefined safe limit, the motor is turned off to prevent overcurrent damage. The use of a microcontroller allows for efficient processing of sensor data and precise control of the relay module that operates the motor. The LCD display provides an easy-to-read interface for monitoring system status, voltage, current, and any fault conditions. This project offers a cost-effective and reliable solution for protecting three-phase induction motors, particularly in industrial and agricultural applications. It can be further enhanced by integrating wireless communication modules for remote monitoring and alert systems.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541084968 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Real-Time Adaptive Physical Network Topology Management and Proactive Network Stability Mechanism for VDCR Allocation in SDN-Enabled Data Centers

(51) International classification	:H04L0045640000, H04L0041120000, H04L0047700000, H04L0045000000, H04L0041089500
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Preetham N

(57) Abstract :
Title: Real-Time Adaptive Physical Network Topology Management and Proactive Network Stability Mechanism for VDCR Allocation in SDN-Enabled Data Centers The invention provides a unified framework for real-time adaptive Virtual Data Center Request (VDCR) embedding and proactive network stability management in Software-Defined Networking (SDN)–enabled data centers. A two-tier Clos spine–leaf topology, managed via persistent bidirectional communication using a SDN protocol with spine switches, enables instant detection of link additions, deletions, or failures and triggers shortest path recalculation. Controller-validated topology snapshots are supplied to a decoupled embedding engine, ensuring decisions reflect the current network state. Integrated network stability checks measure CPU usage, bandwidth usage, latency spikes, and bandwidth fluctuations before and after embedding, delaying or rerouting allocations if instability is detected. The modular, scalable design improves resilience, maintains Quality of Service (QoS), and optimizes resource utilization, making it suitable for cloud, telecom, high-performance computing, and edge/fog environments.

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541084969 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Thermo-chemically Treated Bio-Residue as a Bitumen Extender

(51) International classification	:C08L0095000000, C04B0026260000, A61K0031522000, A61K0008490000, C08K0005092000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Title: Thermo-chemically Treated Bio-Residue as a Bitumen Extender A Bio-Residue Asphalt Binder (BRAB) comprising; caffeine spent residue (CSR), bitumen VG-40, Zycotherm and Sasobit for sustainable pavements and industrial applications. The Bio-Residue Asphalt Binder (BRAB), wherein the binder is prepared using 30% replacement of conventional bitumen with thermally and chemically treated Caffeine Spent Residue (CSR), facilitated by the incorporation of 4% Sasobit additive. A process of preparing the Bio-Residue Asphalt Binder (BRAB) comprising; (101): Thermochemical pre-treatment of Caffeine Spent Residue, a biowaste produced during the extraction of caffeine from coffee beans and (102): Developing a bio-residue asphalt binder (BRAB) by partially replacing bitumen with treated CSR using sasobit as additive.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541084970 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Reputation-Weighted, Quality-Tier Tokenization and Fair Retirement of Carbon Credits on a Blockchain

(51) International classification	:H04L0009320000, H04L0009000000, G06Q0020060000, G06Q0030018000, G06Q0040060000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Manoj Kumar
5)Jigyasa Agrawal

(57) Abstract :
Title: Reputation-Weighted, Quality-Tier Tokenization and Fair Retirement of Carbon Credits on a Blockchain The disclosure provides a block chain-based carbon credit management system incorporating quality-tier tokenization, dynamic reputation scoring, and a dual-pool retirement mechanism to enhance transparency and fairness in voluntary carbon markets. Verified carbon credits undergo automated quality assessment using environmental datasets, including real-time site data and computational models such as machine learning models to determine carbon sequestration levels and are assigned to defined quality tiers with corresponding token multipliers. Credits are divided into a contributor-controlled priority pool and a general pool. Contributor reputation is calculated from both quality-weighted credit contributions and staked tokens, with staking influence capped. Retirement of credits occurs in two phases: direct selection from the priority pool and reputation-weighted allocation from the general pool. All processes are executed via block chain smart contracts, ensuring immutable record-keeping, verifiable audit trails, and protection against quality dilution. The system incentivizes the generation of high-quality credits, mitigates greenwashing risks, and promotes equitable allocation based on historical performance and contributor reputation.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541084972 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CARBONIZED POLYDOPAMINE ENGINEERED MAX PHASE COMPOSITES FOR ELECTROCHEMICAL APPLICATIONS

(51) International classification	:C25B 1/00, C25B 1/02, C25B 1/04, C25B 11/091, C25B 11/00, H01M 4/90, B82Y 30/00, H01M 4/88
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to a composite electrocatalyst for Hydrogen Evolution Reaction (HER) and Supercapacitor applications in a neutral electrolyte comprising a) a Titanium-based MAX phase compound as matrix material; and b) a carbonized polydopamine, wherein the carbonized polydopamine is integrated with the Titanium-based MAX phase, wherein a ratio of the carbonized polydopamine and the Titanium-based MAX phase compound is in the range of 1:1 to 1:3. The disclosure also relates to the method of preparing a composite electrocatalyst.

No. of Pages : 52 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541084974 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Evaluation of Banana peel powder as a natural coagulant for the treatment of wastewater

(51) International classification	:C02F1/28, C02F1/52
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract The purpose of this work is to study the treatment of banana peel powder as a natural coagulant, with particular focus on domestic waste. Wastewater treatment usually includes per step flocculation which is often dependent on rather expensive and polluting chemical coagulants. Polyacrylamide and other such materials are found in banana peel, which makes it na environmentally judicious option. The research worked out the usage of different concentrations of banana peel powder to this end on treated sewage sludge samples in order to determine decrease in the volume of suspended solids, the level of turbidity, and the amount of chemical oxygen demand (COD). It was established that certain dosage positively impacted the results and led to improvement in these parameters. The study also compared the performance of traditionally used coagulants with that of banana peel powder and its performance showed promise of being economical and non-toxic to the environment. Because banana peels are a large amount of agricultural waste, this is not only plant friendly but also cost effective. All in all, this research indicates that there is the potential of using banana peel powder as a coagulant agent for treating domestic waste water.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085012 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Deep Learning-Based Framework for Automated Detection and Classification of Cervical Cancer from Medical Imaging Data

(51) International classification	:G06T7/00, G06V10/82, G06V10/764, G06N3/08, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Santosh Kumar Henge

(57) Abstract :
The present invention discloses a deep learning-based framework for automated detection and classification of cervical cancer from medical imaging data. The framework employs a hybrid architecture combining convolutional neural networks and Vision Transformers to extract robust features from cytology, histopathology, and radiology images. Multimodal integration of imaging and clinical data improves diagnostic accuracy, while data augmentation and transfer learning address data imbalance issues. An explainable AI module enhances transparency by highlighting decision-influencing regions in the images. The system is validated across benchmark and real-world datasets, offering a scalable, efficient, and clinically reliable solution for early cervical cancer diagnosis.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085041 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ATMOSPHERIC WATER EXTRACTION SYSTEM POWERED BY RENEWABLE ENERGY

(51) International classification	:E03B3/28, B01D5/00, B01D53/26, H10F19/00, C02F1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An atmospheric water extraction system powered by renewable energy integrates air purification, desiccant-based moisture capture, controlled regeneration, condensation, and multi-barrier potable-water treatment. Ambient air is drawn through dust and carbon filters and across a rotary desiccant wheel where water vapour is adsorbed. A solar-thermal loop heats a regeneration airstream to desorb the moisture; the humid stream is routed to a condenser that rejects heat to ambient air and/or a radiative condenser panel for night-time cooling and dew collection. Condensate flows through a potable-water train comprising a sediment filter, carbon block filter, UV reactor regulated by a dose controller, and a remineralization cartridge before storage in a sterile tank. A photovoltaic supply, sensors and a microcontroller coordinate wheel rotation, regeneration temperature, condenser selection, and water-quality safeguards including diversion to drain during start-up or fault conditions. The system delivers drinking water from atmospheric humidity with low power and scalability for off-grid deployments. (Accompanied Figures 1-3)

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085042 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED SYSTEM FOR ACADEMIC OUTCOME PREDICTION AND SUSTAINABLE LEARNING ENHANCEMENT IN HIGHER EDUCATION

(51) International classification	:G06Q50/20, G06N3/08, G06F40/30, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
AI-Powered System for Academic Outcome Prediction and Sustainable Learning Enhancement in Higher Education is the proposed invention. The proposed invention focuses on understanding the functions of Academic Outcome Prediction. The invention focuses on analyzing the parameters of Sustainable Learning Enhancement in Higher Education using algorithms of AI Approach

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085044 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : RECONFIGURABLE INTELLIGENT SURFACE UNIT CELL WITH INTEGRATED BIASING AND PIN-DIODE LOADED QUAD SPLIT RING RESONATOR

(51) International classification	:H01Q15/00, H04B7/04, H01Q15/14, H01Q1/38, H01Q21/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)RAVI PANWAR
3)ARZAD ALAM KHERANI

(57) Abstract :
Disclosed is a reconfigurable intelligent surface (RIS) unit cell that utilizes a quad-split ring circular resonator structure, integrated with PIN diodes to enable dynamic phase modulation. The unit cell operates efficiently at a center frequency of 5.2 GHz and provides phase shifts at other frequencies, including 3.6 GHz, 7.6 GHz, and 7.7 GHz. The device achieves 180° phase shifts and a maximum phase difference of 295° at 4.2 GHz. The DC biasing mechanism, implemented through vias in the ROGERS RT5880 dielectric substrate, eliminates the need for external circuitry, simplifying the design and reducing fabrication complexity. This RIS unit cell supports broadband operation across a frequency range of 2.0 GHz to 8.0 GHz and is suitable for applications in smart wireless communication systems, beamforming, and Internet of Things (IoT). The compact and scalable nature of the design allows for deployment in diverse smart environments. Reference will be figure 2

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085045 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A RECONFIGURABLE INTELLIGENT SURFACE FOR ELECTROMAGNETIC WAVE MANIPULATION AND A METHOD THEREOF

(51) International classification	:H01Q15/00, H01Q1/38, H01Q15/14, H01Q3/46
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Disclosed is a reconfigurable intelligent surface (100) with unit cells (102) including a substrate layer (106), a top metallic layer (104), a bottom metallic layer (108), a PIN diode (114), two vias (118), and a DC biasing line (116). The top metallic layer (104) includes a circularly dual split-ring resonator (110) with a split gap (112). The PIN diode (114) is integrated across the split gap (112) of the circularly dual split-ring resonator (110). The DC biasing line (116) is configured to provide DC biasing to the PIN diode (114) through the vias (118). The unit cells (102) are configured to attain a 180° phase difference between the "on" and "off" states of the PIN diode (114) to enable dynamic phase modulation of the reflected electromagnetic waves at frequencies in the range of 5.2 GHz to 5.7 GHz. A method (200) of operating the reconfigurable intelligent surface (100) is provided. Figure 1 will be the reference.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085051 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN ACTIVE WHEEL ALIGNMENT MECHANISM FOR ADJUSTING CASTER ANGLE IN A VEHICLE SUSPENSION SYSTEM

(51) International classification	:B62D17/00, B60G7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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3)Sanjay Ramanath Ravoor
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5)Varun Pathaganahalli Lakshminarayana

(57) Abstract :
ABSTRACT AN ACTIVE WHEEL ALIGNMENT MECHANISM FOR ADJUSTING CASTER ANGLE IN A VEHICLE SUSPENSION SYSTEM The present invention relates to an active wheel alignment mechanism (200) for dynamically adjusting the caster angle in a vehicle suspension system. The mechanism (200) includes an upper suspension arm (202) configured at one end to receive an actuator element (204) and at the other end to engage a support rod (206). A rod-end joint (208) connects the upper suspension arm (202) to the vehicle's upright (214), while a guided connection (212) on the upright constrains the linear displacement of the rod-end joint (208). The actuator element (204) is operatively coupled to the upper suspension arm (202) to vary its effective length or longitudinal position. This controlled displacement of the rod-end joint (208) within the guided connection (212) enables real-time variation of the caster angle while the vehicle is in motion, thereby enhancing steering responsiveness, stability, and adaptability across diverse driving conditions. (Fig. 2A)

No. of Pages : 24 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085060 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Deep Learning-Based Real-Time Facial Recognition System for Secure Access

(51) International classification	:G06F21/32, G06V40/16, G06N3/08, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
This invention discloses a Deep Learning-Based Real-Time Facial Recognition System for Secure Access, which leverages convolutional neural networks for face detection, feature extraction, and matching. The system includes a robust anti-spoofing module to counter presentation attacks and ensures high accuracy under varying environmental conditions. Designed for deployment on edge or cloud platforms, the system offers fast, privacy-compliant, and secure access control for applications in smart buildings, workplaces, defense zones, and public infrastructure. Its modular architecture and encrypted matching mechanism make it suitable for scalable and secure integration across industries.

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085061 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Effectiveness of Developing Concepts and Principles in Physics Through Virtual Lab

(51) International classification	:G09B0005060000, G09B0007000000, G09B0007020000, G09B0005080000, G05B0019042000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention presents an innovative virtual laboratory system designed to enhance the understanding of physics concepts and principles through interactive, simulation-based learning. This system allows students to perform virtual experiments that replicate real-world physics scenarios by manipulating variables and observing outcomes in real time. It addresses the limitations of traditional laboratory settings—such as high costs, safety risks, equipment shortages, and access constraints—by offering a cost-effective, scalable, and accessible platform suitable for diverse educational environments.The platform is equipped with curriculum-aligned experiments, theoretical content, guided procedures, assessment tools, and instructor controls. Its unique features include real-time interactivity, adaptive learning capabilities, integrated evaluation modules, and gamified engagement strategies. The invention supports experiential learning, fosters conceptual clarity, and promotes individualized instruction. It is part

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085062 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Probabilistic Method in Applied Mathematics for Restructuring Power Systems

(51) International classification	:G06Q10/04, G06F30/20, G06F113/04, G06F17/10, G06F17/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a novel probabilistic method grounded in applied mathematics for the restructuring of electrical power systems under uncertain and dynamic conditions. By treating critical system parameters—such as load demand, generation capacity, and equipment availability—as random variables, the method enables a more realistic and flexible analysis of power system performance.Utilizing statistical distributions and Monte Carlo simulations, the invention performs probabilistic load flow analysis, reliability evaluation, and scenario-based optimization. This allows utility operators and system planners to assess a wide range of possible outcomes and make informed decisions that improve grid reliability, operational efficiency, and risk mitigation.The invention is especially suited to modern power networks incorporating renewable energy sources, smart grid technologies, and decentralized generation, where variability and uncertainty are significant. By enabling data-driven, resilient restructur

No. of Pages : 9 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085063 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Smart Water Management System for Precision Agriculture Using IoT Sensors

(51) International classification	:G06Q0050020000, A01G0025160000, G01N0033240000, A01B0079000000, A01G0009240000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The invention discloses a Smart Water Management System for Precision Agriculture that employs IoT-based sensing and automated control to regulate irrigation in real time. By continuously monitoring parameters like soil moisture, temperature, and humidity, the system determines the exact watering requirements of crops and actuates water flow accordingly. This not only conserves water but also enhances crop yield and reduces manual labor. The system supports remote monitoring and control, and can be scaled or adapted to different types of farms. Its integration with analytics platforms makes it a future-ready solution for sustainable agriculture.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085064 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Method of making noble metal nanoparticles formed by green chemistry techniques

(51) International classification	:B82Y30/00, B82Y40/00, B22F1/054, B22F9/18, B22F9/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention discloses a green chemistry-based method for the synthesis of noble metal nanoparticles using biologically derived reducing agents. This eco-friendly approach employs plant extracts, microbial cultures, or other naturally occurring biomolecules to reduce metal ions—such as silver (Ag^{+}), gold (Au^{3+}), or platinum (Pt^{4+})—into stable nanoparticles under mild conditions. The biological agents act as both reducing and capping agents, eliminating the need for toxic chemicals or synthetic stabilizers.The method is carried out at ambient or moderately elevated temperatures and is characterized by simplicity, low energy consumption, and minimal environmental impact. The resulting nanoparticles exhibit uniform size, shape, and high stability, making them suitable for a variety of applications in catalysis, medicine, electronics, and environmental remediation. This invention provides a cost-effective, scalable, and sustainable alternative to conventional nanoparticle synthesis techniques.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085065 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Driven Smart Assistant for Personalized Mental Health Therapy

(51) International classification	:A61B5/16, G16H20/70, G06N20/00, G06F40/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The AI-Driven Smart Assistant for Personalized Mental Health Therapy is an intelligent, adaptive system designed to deliver real-time, individualized mental health support using artificial intelligence, natural language processing, and psychological frameworks. By analyzing user inputs through text or voice, the assistant detects emotional states and behavioral patterns to recommend evidence-based interventions such as Cognitive Behavioral Therapy (CBT), mindfulness exercises, and journaling practices. The system evolves with each interaction, offering increasingly tailored support while maintaining strict data privacy. It also includes a built-in crisis detection mechanism that escalates responses when signs of severe mental distress are identified. This solution aims to make mental healthcare more accessible, continuous, and stigma-free by providing proactive, scalable, and user-centric therapeutic assistance.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085066 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Based Traffic Optimization System for Smart Cities

(51) International classification	:G08G1/00, G06N3/02, G06N3/045, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides an intelligent, AI-based traffic optimization system tailored for smart city applications. It integrates real-time sensor data, machine learning algorithms, and edge computing to analyze, predict, and manage urban traffic flows dynamically. The system adapts to real-time conditions to minimize congestion, reduce emissions, and enhance commuter convenience. It also prioritizes emergency vehicles and supports a mobile app for real-time public interaction. This comprehensive, modular, and scalable solution represents a significant advancement in modern urban mobility management.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085067 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Driven Deep Learning Model for Predictive Healthcare Diagnostics

(51) International classification	:A61B5/00, G06N20/00, G16H50/30, G16H50/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An AI-driven deep learning system and method for predictive healthcare diagnostics is disclosed. The invention is designed to integrate and analyze a wide range of multi-modal patient data, including electronic health records, medical imaging, genomic information, and real-time sensor data. The core of the system is a specialized deep neural network trained to identify complex, subtle patterns indicative of future disease risk. The system generates a predictive risk score or diagnosis for a patient and provides an interpretable explanation of the key factors influencing the prediction. This invention enables healthcare providers to transition from reactive to proactive care by identifying at-risk individuals earlier, facilitating timely interventions, and ultimately leading to improved patient outcomes. The system also features a continuous learning loop, allowing it to autonomously improve its accuracy as new clinical data becomes available.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085068 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Solar Operable Speed Breaker Alerting Device

(51) International classification	:G08G0001160000, H02J0007350000, B60Q0009000000, G06Q0010063500, G08G0001052000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Mr. Vaibhav P. Kulkarni Assistant Professor, Dept. of Mech Engg
8)Mr. Sachin S. Rathod Assistant Professor, Dept. of Mech Engg.,

(57) Abstract :
The invention presents a smart, solar-powered speed breaker alerting device designed to enhance road safety. It detects approaching vehicles using motion sensors and activates visual or audio alerts to warn drivers of an upcoming speed breaker. The system is self-sustaining, using solar energy to power its operation and suitable for deployment in both urban and remote locations. Its intelligent design ensures minimal energy consumption, high reliability, and increased driver awareness, significantly reducing the risk of accidents and vehicle wear caused by unnoticed speed breakers.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085069 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Food Cooking Apparatus with Water Heating Arrangement

(51) International classification :F24C13/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Abstract The present invention relates to a food cooking apparatus integrated with a water heating arrangement that enables efficient and simultaneous cooking of food and heating of water using a single heat source. The apparatus comprises a primary cooking chamber and an adjoining or integrated water container designed to absorb thermal energy generated during the cooking process. Through a strategically designed heat transfer mechanism—such as conductive surfaces, coiled pipes, or heat exchangers—residual heat from cooking is directed toward the water heating unit.This dual-function system optimizes energy utilization, reduces operational costs, and promotes eco-friendly practices by minimizing heat waste. It is especially useful in domestic and compact kitchen environments where space, time, and energy efficiency are critical. The apparatus includes built-in insulation and safety controls, making it a practical, cost-effective, and sustainable solution for modern cooking needs.

No. of Pages : 9 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085106 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Swarm AI for Distributed Problem-Solving with Confidentiality Guarantees

(51) International classification	:G06F21/64, G06N20/00, G06N3/08, G06N3/045
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. S. Theerka Dharshini

(57) Abstract :
This invention introduces a decentralized artificial intelligence framework that enables multiple parties to collaborate on problem-solving while preserving strict confidentiality of both data and model architecture. Instead of relying on a single centralized model, the system fragments the global AI model into encrypted shards, which are distributed across participants for local execution. Updates from these shards are securely aggregated through blockchain-coordinated protocols, eliminating the possibility of reconstructing the complete model at any point. By integrating homomorphic encryption with differential privacy, the framework ensures that sensitive information remains protected during training and inference. Smart contracts embedded in the blockchain enforce participation rules and automate result sharing, removing the dependence on trusted intermediaries. The invention offers a secure, scalable, and trustless environment for AI collaboration, making it highly applicable in domains where confidentiality and competitive sensitivity are critical.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085109 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NEUROMORPHIC AI-ENABLED DRONE FOR REAL-TIME ADAPTIVE DECISION MAKING IN DYNAMIC ENVIRONMENTS

(51) International classification	:G05D0001000000, G06N0003049000, B64C0039020000, B64U0101300000, G06N0003063000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.K.Gokulkannan

(57) Abstract :
The present invention discloses a Neuromorphic AI-Enabled Drone System that integrates brain-inspired computational architectures with autonomous aerial platforms to achieve real-time adaptive decision making in dynamic and unpredictable environments. Conventional drones rely on centralized computation and pre-programmed algorithms, which limit adaptability, introduce latency, and demand significant energy resources. The proposed invention addresses these limitations by embedding neuromorphic computing engines based on spiking neural networks (SNNs) and event-driven computation, enabling efficient parallel processing of sensory inputs with low latency and minimal energy consumption. The system comprises four principal modules: (i) a neuromorphic computing engine that processes asynchronous sensory events such as visual, auditory, and spatial inputs in real time, (ii) a self-learning adaptive control framework that employs reinforcement learning and online training to continuously refine navigation, obstacle avoidance, and task execution, (iii) an adaptive sensor fusion module that integrates data from multiple onboard sensors including cameras, LiDAR, GPS, and inertial units, ensuring robust situational awareness, and (iv) a fault- tolerant resilience layer designed to maintain operational continuity even in the presence of sensor malfunctions, communication loss, or external disturbances. By mimicking biological intelligence, the invention allows drones to autonomously learn and adapt to environmental changes such as weather fluctuations, terrain variability, unexpected obstacles, or adversarial interference without reliance on cloud-based computation. The energy-efficient architecture further extends operational endurance, making the system particularly suitable for mission-critical scenarios where power and computational resources are constrained. Applications of this invention are broad and include search and rescue missions where drones must adaptively navigate debris-filled areas, disaster relief operations where conditions evolve rapidly, defense and reconnaissance missions in communication-denied environments, precision agriculture requiring dynamic crop monitoring and spraying, urban traffic analysis, and environmental hazard mapping for real-time ecosystem assessment. By combining neuromorphic computation with UAV autonomy, the proposed invention establishes a novel biologically inspired paradigm for intelligent aerial robotics, providing superior adaptability, scalability, and resilience over conventional AI-driven drone systems. This invention represents a transformative advancement in autonomous drones, enabling next-generation UAVs to operate effectively in diverse, uncertain, and resource-limited environments.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085114 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Context-Aware AI Model Compression for Culturally Diverse Data

(51) International classification	:G06F40/20, G06N3/02, G06N20/00, G06N3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. S. Theerka Dharshini

(57) Abstract :
The invention discloses a novel AI model compression framework that adapts dynamically to cultural and linguistic diversity, ensuring efficiency without loss of regional accuracy. By embedding cultural vectors into the compression pipeline, the system identifies and protects parameters vital for interpreting dialects, idioms, and social norms. Adaptive pruning guided by cultural relevance replaces conventional weight-based pruning, while knowledge distillation further refines the compressed model for lightweight deployment. The outcome is a compact yet highly accurate model that functions effectively across culturally diverse datasets, making it especially valuable for multilingual AI assistants, rural healthcare platforms, and low-bandwidth applications.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085117 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI Governance & Ethics Orchestration Platform for Curriculum Development and Accreditation

(51) International classification	:G06Q50/20, G06Q10/10, G06Q50/18, G06Q10/105, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. A. Vanitha

(57) Abstract :
The invention presents a SaaS-based orchestration platform that enables business schools and corporate training programs to keep their curricula continuously aligned with global developments in AI governance, ethics, and policy. Rather than relying on manual monitoring or static templates, the system employs an AI-driven regulatory intelligence core to capture and interpret new laws, rulings, and guidelines, and then maps them to business competencies. Suggested updates to syllabi, course materials, and case studies are automatically generated, ensuring teaching content reflects current requirements. Accreditation workflows are streamlined through the automatic creation of evidence packs that demonstrate compliance with standards set by international bodies. In addition, a library of AI-generated ethical scenarios provides faculty with ready-to-use classroom exercises that promote applied learning. By combining regulatory tracking, curriculum mapping, and accreditation support into a unified platform, the invention reduces institutional burden while ensuring that learners gain relevant, future-ready knowledge of AI governance and ethics.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085119 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Powered Dynamic Business Simulation Engine with Real-World Market Data Integration

(51) International classification	:G06Q10/067, G06Q30/0201, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr.A.Vanitha

(57) Abstract :
The invention presents a sophisticated AI-driven platform that transforms business education by simulating real-world economic environments in real time. By continuously integrating live market data, news sentiment, and global events, the system generates dynamic business scenarios that respond to student decisions and evolving conditions. An embedded generative AI engine crafts adaptive narratives, modeling competitor actions and stakeholder reactions to create unpredictable and engaging simulations. The platform further includes an analytical assessment module that evaluates strategic choices, cognitive biases, and leadership skills, offering actionable insights for educators. Faculty members can customize scenario complexity and learning objectives, enabling focused skill development in areas such as crisis management, ethical decision-making, and strategic planning. The invention allows multiple participants to interact simultaneously, fostering collaborative and competitive learning experiences. By merging experiential learning with data-driven evaluation, the platform bridges theoretical knowledge and practical decision-making, preparing students for the complexities of real-world business environments.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085121 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PHOTORECHARGEABLE SUPERCAPACITOR AND METHOD OF FABRICATING PHOTORECHARGEABLE SUPERCAPACITOR ELECTRODE

(51) International classification	:H01G 11/00, H01G 11/86, H01G 11/84, B82Y 40/00, B82Y 30/00, H01G 11/30, H01G 11/22, H01G 11/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
PHOTORECHARGEABLE SUPERCAPACITOR AND METHOD OF FABRICATING PHOTORECHARGEABLE SUPERCAPACITOR ELECTRODE ABSTRACT A method (100) of fabricating a photorechargeable supercapacitor electrode for a photorechargeable supercapacitor (200) which exhibits 3000% capacitance enhancement upon UV illumination and an increase in capacitance with increased current density is disclosed. The method (100) includes applying a zinc precursor solution onto a transparent conductive substrate to form overlapping seed layers, followed by thermal decomposition to produce zinc oxide nanoseeds. The transparent conductive substrate is then immersed in a growth solution to grow zinc oxide nanorods from the nanoseeds. The overlapping nanoseeds provide multiple nucleation sites with varied growth orientations, resulting in randomly oriented nanorods. The multidirectional growth enhances porosity and reduces packing density and increases electrode–electrolyte interface area. FIG. 1

No. of Pages : 58 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085127 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Hybrid Ensemble-Based System and Method for Intelligent Malware Detection Using Machine and Deep Learning Classifiers

(51) International classification	:G06F21/56, G06N3/08, G06N20/20, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a hybrid ensemble learning framework for detecting malware using a combination of traditional machine learning and deep learning models. The system extracts static and dynamic features from software artifacts and processes them using a set of diverse base classifiers, including models such as Support Vector Machines, Random Forests, Convolutional Neural Networks (CNN), and Long Short-Term Memory (LSTM) networks. A stacking-based ensemble aggregation strategy is employed, where the outputs of base classifiers are input into a meta-classifier to improve prediction accuracy. The framework supports periodic retraining using new threat data to adapt to emerging malware variants, including zero-day threats. This invention enhances malware detection accuracy, reduces false positives, and improves resilience against obfuscation techniques. The proposed system is applicable to desktop, mobile, and cloud environments, providing a scalable and intelligent solution for real-time malware classification and cybersecurity defense.

No. of Pages : 7 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085128 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Machine Learning–Based IoT Network for Earthquake Damage Prediction and Structural Risk Assessment

(51) International classification	:G08B21/10, G06F30/27, G06N20/00, G06N3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a Machine Learning–Based IoT Network for Earthquake Damage Prediction and Structural Risk Assessment. The proposed system employs IoT-enabled sensors for real-time seismic and structural monitoring, coupled with machine learning techniques such as Convolutional Neural Networks (CNN) and Long Short-Term Memory (LSTM) models for predictive analysis. The framework integrates edge computing, cloud-based analytics, and automated alerting mechanisms to provide early warnings and assess structural risks. This invention enhances disaster preparedness, ensures infrastructure resilience, and reduces human and economic losses caused by earthquakes.

No. of Pages : 11 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085130 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ZeroTrustNet-IoT: A Dynamic Architecture for Autonomous Anomaly Detection in Zero Trust IoT Frameworks

(51) International classification	:H04L 67/12, G16Y 30/10, G06N 20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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12)Prof. Dr. Indraneel Mukhopadhyay

(57) Abstract :
Abstract We present ZeroTrustNet-IoT, a systems architecture that enhances security of the Internet of Things systems based on the Zero Trust model. Since IoT devices and networks can be easily exploited, the system will always cross-verify and validate actions performed on them, and any trust provided falsely is ignored. Particular attention is paid in the architecture to a high-level anomaly detection capability, which employs superior technologies and analyzes numerous data points to identify uncharacteristic events immediately after they appear. With flexible risk scoring and flexible behavior profile, the system can more readily differentiate actual threats by considering context. Furthermore, ZeroTrustNet-IoT offers a feature that automatically initiates measures to curb threats like decoupling the device and the network as well as shutting down unneeded access that prevents further attacks and mitigate damage in a short time. The architecture can be easily scaled and all resources utilized well, both locally and across clouds, as a result of a combination of local and cloud-based processing and all desired IoT settings. A continuous loop of feedback improves detection models as new types of threats are identified and devices evolve behaviors.

No. of Pages : 20 No. of Claims : 7

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(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085131 A
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(54) Title of the invention : AI-enabled Low Power Architecture for Next Generation IoT Devices

(51) International classification	:G06N3/04, G06F8/36, G06F21/60, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract The present invention is directed to an AI-based low-power architecture for future IoT Devices. The proposed framework mitigates the main issues of existing IOT systems such as, high energy consumption, ineffective computation, the overhead of communication via incorporating a unified framework of lightweight AI, reinforcement learning, and energy harvesting. The architecture features a small-footprint AI engine designed to run efficiently in embedded inferencing applications that harness on-device intelligence from model compression, and pruning to event-driven, neuromorphic-like processing. This reduces the computational burden over the inference and also helps for good inference. A power management system, based on reinforcement learning, acts as a smart device that learns usage patterns and adjusts energy between sensing, computation and communication on the fly. Power harvesting modules can be connected to further complement the architecture, making battery-limited devices operate sustainably. Furthermore, the proposed methodology also facilitates hybrid computation, allowing to offload workloads in a selective way to fog or edge nodes on the basis of the AI-based decision models for managing latency, energy, and bandwidth. Communication energy is saved through an adaptive protocol, powered by context-aware AI, to minimize duplicate transmissions and favor important transmissions. Federated learning guarantees both scalable and privacy-preserving model updates without sending raw data, and lightweight cryptography which in turn offers security for communication in low-power design limits. The architecture can be deployed across the applications of smart healthcare, industrial IoT, environment monitoring, and 6G based smart cities. This innovation thus offers a fundamentally new, AI-centric, energy-efficient IoT framework that guarantees autonomous, secure and scalable operation, opening the door to sustainable future IoT ecosystems.

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085138 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE DEVICE FOR ANIMAL WELLNESS

(51) International classification	:A61B5/00, G16H50/20, G06N3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
DIGITAL WELLBEING SYSTEM AND METHOD FOR FACILITATING PERSONAL GROWTH ABSTRACT A digital wellbeing system (100) for facilitating personal growth is disclosed. The digital wellbeing system (100) comprises a computer device (102) comprising a first processor (106). The digital wellbeing system (100) further comprises a second processor (112) located on an application server (110). The digital wellbeing system (100) is configured to receive the user input comprising reflections, intentions, actions, sentiments, or a combination thereof; analyze the received user input with an artificial intelligence algorithm; record the user input and corresponding feedback on a blockchain ledger (108) to ensure secure and tamper-proof storage; generate a non-tradeable reward token associated with user progress. The digital wellbeing system (100) unifies ethical, emotional, and spiritual aspects of personal development into one structured system. Claims: 10, Figures: 3 Figure 1 is selected.

No. of Pages : 27 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085139 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WRITING ASSISTANCE DEVICE FOR INDIVIDUALS WITH WRIST MALFUNCTION

(51) International classification	:G10L0015260000, G10L0015220000, G10L0015300000, G06F0003160000, G06F0040300000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Kambhampati Bhanu Tejaswi
6)Dr. Srikanth Bethu

(57) Abstract :
WRITING ASSISTANCE DEVICE FOR INDIVIDUALS WITH WRIST MALFUNCTION ABSTRACT A writing assistance device (100) for individuals with wrist malfunction is disclosed. The writing assistance device (100) comprises a microphone (102). The writing assistance device (100) further comprises a motorized scriber (106). The writing assistance device (100) further comprising a Natural Language Processing (NLP) engine (118) communicatively connected to the microphone (102) and to the motorized scriber (106). The writing assistance device (100) is configured to receive the vocal indications from the individual through the microphone (102); process the vocal indications, using a speech recognition algorithm, to convert into corresponding text data; generate a writing output, using a speech-to-text algorithm, based on the text data; and actuate the motorized scriber (106) to write the writing output on the writing medium (108). The writing assistance device (100) improves accessibility and inclusion. Claims: 10, Figures: 3 Figure 1 is selected.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085140 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYBRID ENERGY HARVESTING AND MANAGEMENT SYSTEM AND METHOD THEREOF

(51) International classification	:H02J7/00, H02J7/35, H02N2/18, H02S50/00, H02J7/00, H02J7/35, H02N2/18, H02S50/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)N. Shilpa

(57) Abstract :
HYBRID ENERGY HARVESTING AND MANAGEMENT SYSTEM AND METHOD THEREOF ABSTRACT A hybrid energy harvesting and management system (100). The hybrid energy harvesting and management system (100) comprises piezoelectric sensors (102a-102n). The hybrid energy harvesting and management system (100) further comprises solar panels (104a-104n). The hybrid energy harvesting and management system (100) further comprises a rechargeable battery (106). The hybrid energy harvesting and management system (100) further comprises a microcontroller (108) communicatively connected to the rechargeable battery (106). The hybrid energy harvesting and management system (100) is configured to monitor power generation from the piezoelectric sensors (102a-102n) and the solar panels (104a-104n); manage charging of the rechargeable battery (106); and transmit real-time data related to energy generation, storage status, and consumption to a remote user interface (112). The hybrid energy harvesting and management system (100) integrates both footstep energy and solar energy, ensuring continuous power availability under diverse conditions. Claims: 10, Figures: 7 Figure 1 is selected.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085192 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Detection of Security Threats in Wireless Sensor Networks using Artificial Neural Network

(51) International classification	:H04L0009400000, H04W0084180000, G06F0021550000, H04L0009300000, H04W0012122000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr.V.R.KAVITHA

(57) Abstract :
The present invention is the False data injection attack is a serious problem in data aggregation along with achievement of security mechanisms like integrity and authentication. Compared with conventional desktop computers, implementing security mechanisms that provide authentication, confidentiality and integrity is not easy in wireless sensor networks due to the limited processing power, storage, bandwidth, and sensor node energy. Because of these characteristics such a kind of network suffers from a lot of problems such as data forgery, Sybil attack, worm hole attack, false data injection and other security attacks. Data Aggregation plays an important contribution to improve the multicast communication in hierarchical sensor network. Although data aggregation is very useful, it could cause some security problems because a compromised data aggregator may inject false data during data aggregation. When data aggregation is allowed, the false data detection technique should determine correctly whether any data alteration is due to data aggregation or false data injection. Further, existence of these attacks in data aggregation process has severe effect on the aggregated value which may lead to wrong information the base station or end user. Detection of these attacks and to minimize the loss due to these attacks is one of the major challenges in sensor networks. A combined data aggregation and false data detection technique should be there to ensure that data are altered by data aggregation only.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085201 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SCAFFOLD FOR FACILITATING BONE REGENERATION AND A METHOD FOR FABRICATING THE SAME

(51) International classification	:B33Y0010000000, B33Y0080000000, A61L0027380000, B33Y0070100000, A61L0027560000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)MANJESH KUMAR

(57) Abstract :
ABSTRACT A SCAFFOLD FOR FACILITATING BONE REGENERATION AND A METHOD FOR FABRICATING THE SAME The present disclosure relates to a scaffold and a method for fabricating the same for facilitating bone regeneration. The scaffold comprises polycaprolactone (PCL), polyhydroxybutyrate (PHB), fluorapatite (FHAp) nanopowder, and polypyrrole (PP), processed through solvent-cast 3D printing. The present disclosure further relates to a composite ink formulation, the ink exhibits controlled viscosity, shear-thinning behaviour, and printability while preventing nozzle clogging. The fabricated scaffold mimics the mechanical and electroactive properties of native bone, demonstrates electrical conductivity in the range of 0.02-0.04 S/m, and supports enhanced cell viability and hemocompatibility.

No. of Pages : 52 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085220 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Voice AI Agent-Medical Receptionist

(51) International classification	:G10L0015260000, G10L0015220000, G16H0010600000, G06F0040300000, G10L0015180000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides an AI-driven voice receptionist system tailored for healthcare environments like clinics and hospitals. It integrates with existing hospital telephony infrastructure to manage patient calls, converting speech to text and interpreting intent via advanced natural language processing. Responses are generated contextually and converted back to speech for real-time interaction. Core AI processing is maintained in-house to ensure data privacy and reduce dependence on third-party cloud services. The system connects with electronic health records and appointment databases for personalized patient engagement and scheduling. It includes fallback mechanisms to transfer complex queries to human receptionists seamlessly. Designed for scalability and multilingual support, this AI voice agent enhances operational efficiency, reduces human resource costs, and improves patient experience by providing reliable, automated, and private conversational interactions.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085233 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Bioactive Flavonoid Compound Isolated from Vitex negundo Root and its Biological Activity

(51) International classification	:A61P35/00, A61K36/85, A61K125/00, A61K31/353, C07D311/04, C07D311/20, C07D311/22, A61P35/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: Bioactive Flavonoid Compound Isolated from Vitex negundo Root and its Biological Activity Vitex negundo, a medicinal plant known for its traditional therapeutic uses, exhibits promising anticancer potential due to its rich phytochemical profile. This study evaluated the anticancer activity of root extracts against human lung carcinoma A549 cells using MTT and alkaline COMET assays. Ultrasonic-assisted extraction (UAE) employed with solvents of increased polarity—n-hexane, ethyl acetate, acetone, and ethanol: water (1:1). Among these, n-hexane and ethyl acetate extracts showed significant activity, with IC_{50} values of 25.28 ± 0.264 µg/mL and 20.90 ± 0.455 µg/mL, respectively. Three compounds are isolated from the ethyl acetate extract via RP-PREP-HPLC. Of these, VN-Root-EA-P3 demonstrated potent anticancer activity ($IC_{50} = 40.82 \pm 0.095$ µM) and moderate genotoxicity (Olive moment: 13.21–45.49). Structural elucidation via FTIR, LCMS, and NMR confirmed it to be a flavonoid 5-hydroxy-2-(3-hydroxy-4-metihoxyphenyl)-7,8-dimethoxychroman-4-one. It is non-toxic to normal HDF cells ($IC_{50} = 129.50 \pm 0.033$ µM). This is the first report of this flavonoid from Vitex negundo root with anticancer properties.

No. of Pages : 44 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025

(21) Application No.202541085234 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Method of Synthesizing Oxazepine Based Compounds

(51) International classification	:A61P25/28, C07D273/06, A61P25/28, C07D273/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: A Method of Synthesizing Oxazepine Based Compounds The present disclosure proposes a method of synthesizing oxazepine based compounds possessing potent inhibitory activity against the acetylcholinesterase (AChE) enzyme, thereby serving as effective therapeutic agents for the prevention of Alzheimer's disease. Initially, an aldehyde derivative (2a-2l) and anthranilic acid (1) are dissolved in ethanol, thereby promoting a reaction that results in the formation of a Schiff base (3a-3l). Next, the Schiff base (3a-3l) is dissolved with plurality of anhydrides includes phthalic (4), maleic (5), and succinic anhydride (6) in the presence of a solvent and catalyst, thereby facilitating a reaction that yields plurality of ligands ((7a-7l), (8a-8l), (9a-9l)). Finally, the oxazepine based compounds (8d, 9c) are isolated from the plurality of ligands ((7a-7l), (8a-8l), (9a-9l)) and the oxazepine based compounds (8d, 9c) is subjected to purification. The proposed oxazepine compounds (8d, 9c) enhances cognitive performance, memory retention, and quality of life.

No. of Pages : 25 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/09/2025
(21) Application No.202541085240 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Quality Driven Web Service Classification Using Semi-Supervised Techniques

(51) International classification	:G06F18/214, G06N20/00, G06N3/08, G06N3/045, G06F40/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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9)BACHU GOWTHAM
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(57) Abstract :
The invention introduces a novel semi-supervised machine learning framework designed for quality-driven classification and recommendation of web services. Traditional service classification and discovery mechanisms rely heavily on large volumes of labeled training data, which are costly and time-consuming to obtain. To address this limitation, the proposed framework leverages semi-supervised learning to make effective use of a small set of labeled web service data, while simultaneously exploiting the abundant pool of unlabeled data available in real-world repositories. Web services are automatically categorized into four distinct quality tiers—Bronze, Silver, Gold, and Platinum—based on a set of critical Quality of Service (QoS) parameters, including throughput, availability, response time, and reliability. In addition to classification, the system incorporates a recommendation engine that employs a K-Nearest Neighbor (KNN) algorithm to identify and suggest the most relevant services that align with dynamic user requirements. To ensure transparency and user trust, the framework is further enhanced with Explainable Artificial Intelligence (XAI) capabilities using the Local Interpretable Model-Agnostic Explanations (LIME) technique, which provides clear justifications for classification and recommendation outcomes. This explainability not only fosters user confidence but also supports informed decision-making in service selection. By combining semi-supervised learning, QoS-driven categorization, intelligent recommendation, and explainable AI, the proposed invention significantly enhances the accuracy, scalability, and efficiency of web service discovery. The framework reduces the dependency on extensive manual labeling, minimizes human intervention, and provides a robust and scalable solution to support both end-users and service providers in modern service-oriented architectures.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/09/2025
(21) Application No.202541086682 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FORMULATION AND EVALUATION OF FAST DISSOLVING TABLETS OF DOMPERIDONE BY 32 FACTORIAL DESIGN

(51) International classification	:A61K9/20, A61K31/454, A61K47/34, A61K47/22, A61K31/79
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention discloses novel fast dissolving tablet formulations of Domperidone developed using systematic 3^2 factorial design optimization that demonstrate significantly enhanced dissolution characteristics and bioavailability compared to conventional market formulations. The optimized composition contains Domperidone (10 mg) with Crospovidone (7.5 mg) and Indion 414 (7.5 mg) as synergistic superdisintegrants, achieving rapid disintegration within 19 seconds and 96% drug release within 30 minutes. The systematic optimization approach utilizes Design Expert software to establish mathematical models that accurately predict formulation performance and guide optimization decisions, resulting in polynomial equations for water absorption ratio, disintegration time, and drug release characteristics. Comprehensive in vivo validation studies in Wistar rats demonstrate statistically significant improvements in pharmacokinetic parameters including 22% increase in Cmax (54.02 vs 44.18 μg/mL), substantial reduction in Tmax (0.25 vs 1.21 hours), and enhanced absorption rate constant (2.164 vs 0.748 hr^{-1}) compared to marketed Domperidone tablets. The formulation exhibits excellent stability characteristics and compatibility profiles confirmed through FTIR and DSC analyses, with no significant changes observed during threemonth accelerated stability studies conducted under ICH guidelines. The invention addresses critical limitations of conventional Domperidone formulations including poor dissolution rates and delayed therapeutic onset, providing enhanced treatment options for patients requiring rapid antiemetic therapy in conditions such as chemotherapy-induced nausea and vomiting.

No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/09/2025

(21) Application No.202541086961 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI Job Match: Empowering Indian Housewives with Smart Work-from-Home Opportunities

(51) International classification	:G06Q10/1053, G06N20/00, G06N3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: AI Job Match: Empowering Indian Housewives with Smart Work-from-Home Opportunities This invention discloses an artificial intelligence-powered mobile application designed to connect Indian housewives with personalized, verified, and accessible work-from-home opportunities. The system utilizes an AI-driven recommendation engine that analyzes user profiles—including skills, education, availability, language, and interests—to suggest suitable jobs such as cooking, tailoring, tutoring, makeup services, and handicraft sales. In addition to job matching, the platform incorporates a small business management module featuring inventory tracking, order management, and customer engagement tools, enabling housewives to transform household talents into structured entrepreneurial ventures. The application further enhances inclusivity through multilingual interfaces, voice-assisted navigation, and localized content, ensuring accessibility for women with limited digital literacy. Integrated training modules, upskilling videos, and digital literacy guides empower users to expand their skill sets over time. Verified listings from trusted organizations and secure payment integration ensure safety and transparency. By fostering financial independence and confidence, the invention supports women’s empowerment and digital inclusion.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/09/2025
(21) Application No.202541086962 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Real-Time Crime Detection and Prediction Using Machine Learning

(51) International classification	:G06Q50/26, G06N20/00, G06V20/52
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: System and Method for Real-Time Crime Detection and Prediction Using Machine Learning The present invention discloses a system and method for real-time detection and prediction of criminal activity using machine learning techniques applied to multimodal data. The system integrates inputs from CCTV video feeds, emergency call audio, police records, social media texts, and structured crime datasets through a data acquisition and preprocessing engine. A feature extraction module derives facial traits, gestures, voice stress patterns, textual sentiment, and spatiotemporal attributes. These features are analyzed by a machine learning engine employing supervised algorithms for classifying known crime types and unsupervised models for detecting anomalies and emerging threats. A real-time monitoring subsystem continuously compares live data with predictive models to trigger alerts, while a visualization interface generates heat maps, risk dashboards, and suspect trajectories. The invention enables proactive policing by forecasting crime-prone zones, reducing response times, and supporting resource allocation. Ethical safeguards ensure fairness, security, and compliance in law enforcement applications.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/09/2025
(21) Application No.202541087094 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTIMODAL EMOTION CLASSIFICATION USING BERT AND WAV2VEC: A FUSION OF TEXT AND AUDIO MODALITIES

(51) International classification	:G10L25/63, G06F40/30, G10L15/26, G06N3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Richa Sinha

(57) Abstract :
Abstract Emotion recognition has garnered significant interest in recent years due to its profound implications for enhancing human-computer interaction (HCI) systems. By enabling machines to detect, interpret, and respond to human emotions, it opens avenues across various applications, including virtual assistants, mental health monitoring, e-learning platforms, and affective computing interfaces. The ability to perceive emotions accurately enhances the contextual understanding of user intent, thereby leading to more natural, empathetic, and effective interaction paradigms. Here, we present a robust multimodal deep learning framework for emotion recognition by integrating textual and acoustic modalities. Textual features are extracted using BERT embeddings, while Wav2Vec2 representations are employed for acoustic features. The embeddings are concatenated and fed into a fully connected neural network for classification. Experiments conducted on the MELD dataset, highlighting the complementary nature of text and speech in emotional expression. Additionally, waveform visualizations for different emotions offer intuitive insights into acoustic patterns. This work contributes toward building more emotionally intelligent systems.

No. of Pages : 12 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/09/2025
(21) Application No.202541087898 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Real-Time AI Posture Risk Detection System Using RULA and REBA Based Ergonomic Assessment

(51) International classification	:A61B5/11, G06N3/08, G06V10/70, G06T7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)P G Ayush Rai
6)Aashish A Shirahatti

(57) Abstract :
This invention presents a real-time ergonomic posture risk detection system that integrates computer vision, artificial intelligence, and established ergonomic assessment methods (RULA/REBA) to continuously monitor and evaluate human posture in dynamic work environments. The system comprises a camera-based image acquisition module, an AI-driven pose estimation engine, and an algorithmic framework for automatic calculation of RULA/REBA scores based on skeletal joint angles. By providing instant feedback and alerts when high-risk postures are detected, as well as comprehensive data logging for ergonomic audits, the invention eliminates subjectivity, enables continuous monitoring, and facilitates early intervention to prevent work-related musculoskeletal disorders (WRMSDs) across various industries.

No. of Pages : 10 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/09/2025
(21) Application No.202541087899 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HOLO – EDU: AI Powered Holographic Assistant

(51) International classification	:G06Q50/20, G06F3/01, G09B5/06, G06N20/00, G10L15/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Pavan Raj R G

(57) Abstract :
The project, "AI-Powered Holographic Assistant for Affordable and Immersive Education," aims to transform the learning experience for students, especially in under-resourced regions, by combining conversational artificial intelligence and holographic display technology. Traditional learning methods often lack engagement, personalization, and interactivity, particularly in rural or low-income settings where access to quality education is limited. This project introduces a cost-effective solution that delivers voice-based learning content through a virtual AI assistant displayed on a DIY holographic projection system.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/09/2025

(21) Application No.202541088213 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DYE APPLICATOR COMB

(51) International classification	:A45D0024220000, A61B0005000000, E02F0003360000, A45D0024100000, A01K0013000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)ABDUL AZEEZ. M

(57) Abstract :
ABSTRACT A DYE APPLICATOR COMB The present invention is a Dye Applicator Comb comprising of a comb spine (100) with an integrated dye channel (101); a connector neck (103) with threaded coupling (102) for attachment to a dye bottle (104); and a plurality of comb teeth (105) configured to dispense dye during combing. Reference figure : Figure 1 Dated this the 16th day of September 2025 MUHAMMED SUNEER V P REG. No. IN/PA – 4320 (Regd. Patent Agent for the Applicant)

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/09/2025
(21) Application No.202541088780 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MACHINE FOR WASHING AND DRYING FARM PRODUCE

(51) International classification	:A23N12/02, A23N 12/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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1)G. Ashok

(57) Abstract :
MACHINE FOR WASHING AND DRYING FARM PRODUCE ABSTRACT A machine (100) for washing and drying farm produce is disclosed. The machine (100) comprises a washing basin (102) adapted to receive the farm produce, together with a spraying unit (104) configured to direct water onto the produce stored within the basin. An air bubbling unit (106) is disposed at the base of the washing basin and is adapted to agitate the farm produce during washing, thereby enhancing cleaning efficiency. The machine (100) further comprises a filtration and sterilization unit (108), connected to the washing basin, which is adapted to purify used water. The purified water may then be returned into the washing basin (102) through a recycling conduit (110) to enable efficient resource utilization. Upon completion of washing, the farm produce may be dried by a drying unit (112) that operates using warm air flow, centrifugal action, or a combination thereof. Claims: 10, Figures: 3 Figure 1A is selected.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/09/2025
(21) Application No.202541088781 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ANALYTICS SYSTEM FOR LIVER DISEASES AND METHOD THEREOF

(51) International classification	:G16H50/30, G06N3/08, G16H50/70, G06F18/2415
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Thota Aarthi
3)Meghana Telu
4)Velagandula Akshith
5)Dharanidhar Gadipalli

(57) Abstract :
ANALYTICS SYSTEM FOR LIVER DISEASES AND METHOD THEREOF ABSTRACT An analytics system (100) for liver diseases is disclosed. The analytics system (100) comprises a client device (102) comprising a first processor (104); a second processor (106) located on an application server (108); a communication network (112) adapted to establish a communicative link connecting the client device (102) to the application server (108); and a storage medium (114) comprises programming instructions executable by the second processor (106). The analytics system (100) is configured to collect and preprocess the patient data; apply a stacking ensemble model comprising machine learning classifiers with a logistic regression meta-learner; predict a fibrosis stage; apply probability thresholds for computing a probability score and a confidence level; and transmit the prediction, the probability score, and the confidence level to a secure cloud database (110). The analytics system (100) enables non-invasive detection of liver fibrosis severity. Claims: 10, Figures: 3 Figure 1A is selected.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/09/2025
(21) Application No.202541088782 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DIAGNOSIS SYSTEM FOR UNDER-REPRESENTED ENDOCRINE DISEASES FROM HETEROGENEOUS MEDICAL DATA INPUTS

(51) International classification	:A61B5/00, G16H50/20, G16H50/30, G16H15/00, G16H80/00, G06N3/08, G16H50/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. A Giridhar Babu

(57) Abstract :
DIAGNOSIS SYSTEM FOR UNDER REPRESENTED ENDOCRINE DISEASES FROM HETEROGENEOUS MEDICAL DATA INPUTS ABSTRACT A diagnosis system (100) for underrepresented endocrine diseases from heterogeneous medical data inputs is disclosed. The diagnosis system (100) comprises a client device (102) comprising a first processor (104). A second processor (106) located on an application server (108). The diagnosis system (100) is configured to: acquire heterogeneous medical data assign each data type to a corresponding neural network stream; extract modality-specific features from each of the neural network streams; perform multimodal fusion of the extracted features using an attention-based fusion layer to generate a unified diagnostic representation; classify the unified diagnostic representation using a classification layer to predict a probable endocrine disorder along with a confidence score; and generate an interpretable diagnostic report. The diagnosis system (100) processes heterogeneous medical inputs such as imaging data, laboratory reports, genomic sequences, and clinical notes in a unified framework. Claims: 10, Figures: 3 Figure 1 is selected.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/09/2025
(21) Application No.202541088783 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEVICE FOR INTEGRATED WORKPIECE PROCESSING

(51) International classification	:H01L0021670000, H01L0021304000, B25J0009160000, B23Q0017200000, B23K0026380000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)G. Ashok

(57) Abstract :
DEVICE FOR INTEGRATED WORKPIECE PROCESSING ABSTRACT A device (100) for integrated workpiece processing is disclosed. The device (100) comprising: a platform (102) adapted to receive a workpiece; a dimension sensing unit (106) adapted to measure dimensions of the workpiece; a marking unit (108) adapted to form an outline on the workpiece based on user-defined input dimensions; a hardness sensing unit (112) adapted to detect hardness of the workpiece; a cutting tool (114) adapted to cut the workpiece along the outline; and a control unit (116). The device (100) is configured to: receive the measured dimensions, the outline, and the hardness of the workpiece; adjust cutting parameters of the cutting tool (114); and actuate the cutting tool (114) with the adjusted cutting parameters to cut the workpiece along the outline. The device (100) automatically adjusts cutting parameters such as pressure, depth, and speed based on a hardness of material. Claims: 10, Figures: 3 Figure 1A is selected.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/09/2025
(21) Application No.202541089805 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ISOCENTRIC C-ARM MEDICAL IMAGING APPARATUS WITH SPIRAL SPRING-BASED BALANCING MECHANISM

(51) International classification	:H05G1/02, A61B6/08, A61B6/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An isocentric C-arm medical imaging apparatus (100) is disclosed, featuring an isocentric C-arm assembly (7) rotatable about an isocentric axis (1) and a spiral spring-based balancer unit (3) configured to generate a counteracting torque that compensates for gravitational forces during rotation. The balancer unit (3) is housed within a yoke housing (8) at the isocentric axis (1) and includes a spring tension adjuster (4) for preload adjustment to accommodate variations in the center of gravity. Flexible tension members (5) connect the balancer unit (3) to opposed sides of the C-arm assembly (7), enabling smooth torque compensation during upward and downward movements. The system eliminates the need for lead counterweights, reducing overall weight and improving maneuverability. An operator handle (9) facilitates manual positioning with reduced effort. This apparatus

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/09/2025
(21) Application No.202541089977 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Browser Extension for Preventing Sensitive Data Leaks during Online Uploads

(51) International classification	:G06F0021620000, H04L0009400000, G06F0021600000, H04L0067550000, G06F0021320000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Dr. Mohammed Tajuddin

(57) Abstract :
A browser extension called SafeUpload guards against inadvertently disclosing private data when uploading files online. It automatically checks text, photos, and files for private keys, metadata, and identifiers. If any content is found, it notifies the user and gives them the choice to anonymize or redact it. SafeUpload improves user privacy and digital security by reducing the likelihood of identity theft, stalking, and targeted cyberattacks by filtering sensitive material before it is published.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/09/2025
(21) Application No.202541090103 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED BANANA FIBER EXTRACTION MACHINE WITH INTELLIGENT GRADING AND FIBER COLLECTION SYSTEM

(51) International classification	:D01B1/00, D01B1/30, D01B9/00, D21C5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Ms. PON. RAKSHANA
6)Mr. CHARAN B

(57) Abstract :
ABSTRACT AUTOMATED BANANA FIBER EXTRACTION MACHINE WITH INTELLIGENT GRADING AND FIBER COLLECTION SYSTEM The automated banana fiber extraction machine using intelligent grading and fiber collection system (10) as presented in this invention enables efficient processing of banana pseudostems to create high-quality fibers. The machine (10) processes pseudostems through its input hopper (51) to primary shredding unit (52) for strip uniformity before extracting fibers using roller unit (53) which has anti-fiber-wrap stopper plates (59) for separation. This ai-powered system (56) uses hyperspectral imaging alongside moisture sensors to conduct immediate fiber evaluation and an automatic deflection unit (54) filters fibers according to quality points which are directed to specific outlets (57) and storage containers (58). Waste pulp along with residual material gets accumulated in the waste material collector bin (60). The emergency stops button and operator display and control panel (61, 62) combined with safety systems deliver live feedback that enhances operational security and fiber consistency needed for textile and composite end products. Fig 1

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/09/2025
(21) Application No.202541090106 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LASER GUIDED NAIL CUTTER

(51) International classification	:A45D29/02, B23K26/38
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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5)Mr. K. MUKILAN
6)Mr. SHYAM SUNDAR T

(57) Abstract :
ABSTRACT LASER GUIDED NAIL CUTTER The invention is a kid safe laser nail cutter device that cuts fingernails without hurting or disturbing children. It is designed to assist parents and protect children. The device consists of a round fibre ring, a built-in laser cutting section, an optical fibre channel, a spring system, and a safety system with sensors. The fibre ring is designed to wrap around an individual's finger and constrains the internal laser emitter, which emits a controlled laser beam through a cutting gap. The cutting fibre channel guides the beam to follow the nail shape, enabling precise and even trimming. A spring system along the gap causes it to stretch and remain taut, ensuring that it fits. The cutting section contains sensors to detect skin and deactivate the laser automatically to prevent accidental injury. In addition, the device contains led lights and a child-lock safety option to regulate how it is used. This invention makes nail cutting safe, clean, and efficient for children, minimizing risk and manual handling. Fig 1

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/09/2025
(21) Application No.202541090112 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART ANTI-NAUSEA WRISTBAND FOR MOTION SICKNESS

(51) International classification	:A61B5/00, A61M37/00, G16H20/17, A61B5/024
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Mr. S. GOWTHAM
4)Mr. P. RAMANATHAN
5)Dr. SYEDAKBAR SYED YUSUFF

(57) Abstract :
ABSTRACT SMART ANTI-NAUSEA WRISTBAND FOR MOTION SICKNESS The present invention discloses a smart anti-nausea wristband designed for real-time, non-invasive monitoring and active management of motion sickness. The system comprises a biocompatible stretchable band (51) and an integrated system, which couples the band, having sensing devices, a microcontroller unit (57), wireless circuitry (61) and a rechargeable battery (62), with a microneedle-based drug delivery unit (58). The biosensor array tracks physiological signals including skin temperature (53), electrodermal activity (54), heart rate (55) and motion (56). These inputs are processed by the mcu (57) to evaluate nausea conditions such as by ai algorithms or threshold logic. Once symptoms are identified, the system triggers spring-based injector (60), gently dispensing anti-nausea medication from replaceable cartridge (59) through microneedle unit (58). All data is transmitted wirelessly over bluetooth low energy (61) to mobile application (65) for monitoring and diagnostics. It has a usb-c hosting, or magnetic on the device (63) for charging, a manual override button with child-lock (67) and status alert leds (66). A cooling/vibration pad (68) may provide additional symptomatic relief. It is also fully encased in a hypoallergenic, water-resistant material (64), to ensure user safety, comfort, and durability in dynamic environments such as travel or transportation. This smart wearable provides a compact, automated, and user-friendly solution for real-time nausea detection and intervention, improving user quality of life and safety in motion-sensitive scenarios. Fig 1

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/09/2025
(21) Application No.202541090283 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INSECTICIDE COMPOSITION, FORMULATIONS AND PROCESS FOR PREPARATION THEREOF

(51) International classification	:A01N43/40, A01P7/04, A01N25/04, A01N25/14, A01N53/00, A01N25/02, A01N43/653
(31) Priority Document No	:NA
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(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to an agrochemical composition comprising the active ingredients Nitenpyram, Pymetrozine, and Propiconazole. More specifically, it provides an insecticidal composition containing these three active ingredients in combination with one or more agrochemically acceptable excipient(s). The disclosure further relates to formulations comprising Nitenpyram, Pymetrozine, and Propiconazole along with one or more agrochemically acceptable excipient(s), as well as to processes for their preparation.

No. of Pages : 31 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/09/2025
(21) Application No.202541090425 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A COMPOSITION AND METHOD FOR FABRICATING PERFUSABLE TISSUE CONSTRUCTS USING DUAL-HYDROGEL BIOPRINTING SYSTEMS

(51) International classification	:C12M0003060000, A61L0027380000, B33Y0010000000, C12M0003000000, A61L0027220000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)AKSHATHA
4)RUDRA NATH GHOSH
5)PRAMOD K
6)JOSEPH THOMAS

(57) Abstract :
A COMPOSITION AND METHOD FOR FABRICATING PERFUSABLE TISSUE CONSTRUCTS USING DUAL-HYDROGEL BIOPRINTING SYSTEMS The current invention pertains to a dual-hydrogel formulation and a technique for creating perfusable hollow tissue structures through a combined bioprinting method. The system consists of a hydrogel matrix that includes methacrylate-functionalized gelatin (GelMA) and thiolated gelatin (Gel-SH), which are crosslinked using UV light and thiol–ene chemistry to create a scaffold that is both biocompatible and mechanically stable. A sacrificial hydrogel made of gelatin and oxidized alginate, crosslinked by borax, is co-printed to create temporary internal channels. These pathways are intentionally eliminated under gentle aqueous conditions, leading to open, flow-capable networks that resemble natural blood vessels. The technique ensures high cell viability, customizable shapes, and regulated mechanical attributes, making it appropriate for tissue engineering, organ-on-chip systems, and drug testing purposes. This innovation allows for scalable, high-precision creation of vascularized structures that could be used in regenerative medicine, disease modeling, and soft lithography. FIG.2

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/09/2025
(21) Application No.202541090442 A
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(54) Title of the invention : A COMPOSITION FOR BIOCOMPATIBLE REVERSIBLE SACRIFICIAL HYDROGEL AND A METHOD THEREOF

(51) International classification	:B33Y0010000000, C12M0003060000, A61L0027380000, B33Y0070000000, A61L0027220000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A COMPOSITION FOR BIOCOMPATIBLE REVERSIBLE SACRIFICIAL HYDROGEL AND A METHOD THEREOF This invention pertains to a hydrogel composition that is biocompatible and can be reversibly crosslinked, consisting of oxidized alginate (OA), gelatin, and borax, intended for application as a sacrificial material in 3D bioprinting and tissue engineering. The hydrogel is created through ionic crosslinking of OA and gelatin with 0.1 M borax, allowing gentle gelation and later elimination under physiological conditions like exposure to phosphate-buffered saline at 37 °C. This structure offers temporary support during production and aids in developing internal voids or vascular-like pathways in a lasting scaffold. The formulation can be adjusted in degradation speed through pH and temperature, maintaining excellent structural integrity after removal. The hydrogel lacks harmful photoinitiators, accommodates cell-loaded structures, and is ideal for extrusion printing. It is adaptable, economical, and eco-friendly, providing a flexible option for bio-fabrication, organ-on-chip systems, and surgical modeling that needs temporary, biodegradable internal structures. FIG.3

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/09/2025
(21) Application No.202541090647 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SMART IOT SYSTEM FOR HUMAN EMOTION DETECTION USING EEG AND HYBRID DEEP LEARNING NETWORKS

(51) International classification	:A61B0005000000, A61B0005369000, G06N0003045000, G06F0003010000, A61B0005160000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)DR. L. M. I. LEO JOSEPH

(57) Abstract :
A SMART IOT SYSTEM FOR HUMAN EMOTION DETECTION USING EEG AND HYBRID DEEP LEARNING NETWORKS
A smart Internet-of-Things system and method for human emotion detection using non-invasive electroencephalography (EEG) signals and hybrid deep learning networks is disclosed. Wearable EEG end devices transmit brain signals to gateway devices that perform pre-processing and fast Fourier transform to convert the signals into the frequency domain. Features are analysed by a hybrid deep learning model integrating convolutional and recurrent neural networks to capture both spatial and temporal characteristics of the EEG data. Processing is distributed across gateway devices, fog worker nodes, and a cloud data-centre node coordinated by software modules for data aggregation, resource allocation, and security. The system provides real-time, multi-class emotion classification with improved accuracy and low latency, enabling applications in mental health monitoring, adaptive interfaces, and human–computer interaction. By combining IoT sensing, fog/cloud computing, and advanced deep learning, the invention delivers a scalable and reliable platform for continuous emotion recognition.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/09/2025
(21) Application No.202541090650 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN INTEGRATED DIGITAL PEDAGOGICAL SELF-EFFICACY ASSESSMENT AND DEVELOPMENT SYSTEM FOR EDUCATIONAL INNOVATION

(51) International classification	:G09B0019000000, G09B0005020000, G09B0007000000, G09B0007020000, A61B0005000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
AN INTEGRATED DIGITAL PEDAGOGICAL SELF-EFFICACY ASSESSMENT AND DEVELOPMENT SYSTEM FOR EDUCATIONAL INNOVATION The invention relates to an integrated digital system for assessing and developing educators' pedagogical self-efficacy in digital teaching environments. The system comprises a data collection module, an artificial intelligence analysis module, a feedback generator, an adaptive learning pathway generator, and a user interface. The platform captures teaching activity data in real time from connected digital tools, analyzes it through AI to identify pedagogical strengths and weaknesses, and provides immediate, personalized feedback to the educator. It further generates adaptive learning pathways that dynamically evolve with the educator's progress, ensuring targeted and relevant development. The system maintains continuous monitoring through comprehensive educator profiles and progress dashboards, supporting ongoing professional growth. By integrating assessment, feedback, training, and tracking in a unified platform, the invention overcomes limitations of fragmented and infrequent assessment tools. The invention thereby enables continuous, effective, and innovative enhancement of digital pedagogical skills.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/09/2025
(21) Application No.202541090796 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HIGH-STRENGTH BRICK COMPOSITION METHOD WITH PROCESSED CONSTRUCTION WASTE AGGREGATES

(51) International classification	:C04B0033132000, C04B0018160000, C04B0020020000, C04B0028000000, C04B0033320000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
HIGH-STRENGTH BRICK COMPOSITION METHOD WITH PROCESSED CONSTRUCTION WASTE AGGREGATES
ABSTRACT This invention presents a method for producing high-strength bricks using processed construction waste aggregates, offering a sustainable solution to the growing need for eco-friendly building materials. The process involves collecting, sorting, and cleaning construction waste materials, such as concrete and asphalt, followed by crushing them into fine aggregates. These aggregates are then combined with traditional binding materials, such as clay or shale, to create a durable brick composition. The mixture is subjected to high-temperature firing to achieve optimal mechanical properties, resulting in bricks with enhanced strength, porosity, and load-bearing capacity. This innovative approach significantly reduces the reliance on natural resources and lowers energy consumption in brick production. It also supports the principles of circular economy by recycling construction waste, reducing landfill contributions. The resulting high-strength bricks are cost-effective, versatile, and suitable for a wide range of applications, from residential to commercial construction projects.

No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/09/2025
(21) Application No.202541090912 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for AI-Integrated Latching Controlled Wave Energy Conversion using Eddy Braking Mechanism

(51) International classification	:F03B13/14, F03B13/16, G03N3/08, B60T13/74
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides a modular wave energy converter (WEC) system and method for maximizing power extraction. The system comprises a wave energy converting unit, an AI module and an eddy braking control unit as shown in Figs. 1 and 2. The wave energy converting unit includes a buoy (1) having one or more sensors, bearings (2), guide rails (3), connecting rod (4), soft metal plate (5), power take-off mechanism (9), base holder plate (7) and supporting frame (10) with reflective seawall (12).The AI module is trained with simulation and experimental datasets to predict one or more latching control parameters for phase synchronization between buoy and wave excitation. The eddy braking control unit comprises electromagnets (6), eddy braking control assembly (8) and microcontroller (11) to apply variable control signals in a frictionless manner. Thus, the system improves energy capture, enables real-time adaptive control, and ensures frictionless operation.

No. of Pages : 32 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/09/2025

(21) Application No.202541091178 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI-AGENT REINFORCEMENT LEARNING FRAMEWORK FOR AUTONOMOUS IOT SWARM COORDINATION

(51) International classification	:G06N0007010000, G06N0003006000, G06N0020000000, G06N0003092000, G06N0005043000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to a multi-agent reinforcement learning (MARL) framework for autonomous IoT swarm coordination. The framework enables large-scale decentralized decision-making through hierarchical reinforcement learning, dynamic communication optimization, and distributed reward sharing. It incorporates meta-learning for rapid adaptation, heterogeneity adaptation for diverse agent capabilities, and energy-aware mechanisms for low-latency real-time coordination. The invention addresses scalability, non-stationarity, and communication bottlenecks in IoT swarm systems, enabling applications in smart transportation, disaster response, industrial automation, and healthcare.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/09/2025

(21) Application No.202541092318 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Ayusteam: A Low-Cost, Safety-Enhanced Ayurvedic Steam Therapy Device with Integrated Water-Level and Pressure Monitoring

(51) International classification	:A61H33/06, A61F7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION The present invention discloses a compact, low-cost, and safety-enhanced Ayurvedic steam therapy device (Swedana machine) designed to modernize and standardize traditional steam treatments while preserving their authenticity. The device is constructed using a modified pressure cooker chamber as the primary vessel, enabling it to withstand elevated pressure and temperature conditions safely during therapy. The invention introduces essential safety and monitoring features absent in conventional devices. A water-level sensor interfaced with an Arduino microcontroller provides continuous monitoring of water availability, with real-time readings displayed on a 16x2 LCD screen. This ensures that the system never operates under dry conditions, thereby preventing overheating and equipment damage. Additionally, a mechanical pressure gauge mounted on the vessel provides simple, real-time monitoring of steam pressure, allowing practitioners to regulate therapy within safe and effective thresholds. The system further enhances usability by incorporating visual and audio alerts, such as LED indicators or buzzers, which are activated when water levels fall below a predefined threshold. Steam generation is powered by a standard external heating coil, making the design both energy-efficient and compatible with existing infrastructure. Steam is safely released through a calibrated outlet pipe and safety valve, ensuring controlled delivery during Swedana procedures. Key advantages of the invention include its affordability (manufacturing cost under ₹1,500), portability for use in mobile health camps or small clinics, and user-friendly interface suitable for practitioners with limited technical expertise. Unlike complex automated systems, the invention adopts a modular and scalable architecture, allowing components such as the heating coil, sensors, or display to be easily replaced or upgraded. The design is also future-ready, supporting integration of additional features such as temperature sensors, automatic shutoff mechanisms, or wireless monitoring modules without altering its core structure. By combining traditional Ayurvedic workflows with modern safety mechanisms, this device addresses long-standing challenges of overheating, dry heating, and uncontrolled steam pressure in conventional setups. It represents a sustainable, practitioner-friendly, and culturally compatible solution, ensuring reliable, consistent, and safe delivery of Ayurvedic steam therapy across both rural and urban healthcare environments.

No. of Pages : 29 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/09/2025

(21) Application No.202541092319 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SmartBinX: A Low-Cost Hybrid AI and Sensor-Based Approach to Autonomous Waste Segregation in Smart Cities

(51) International classification	:B65F1/14, B65F1/00, G06Q10/30, G06Q50/26
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT OF THE INVENTION Title: SmartBinX: A Low-Cost Hybrid AI and Sensor-Based Approach to Autonomous Waste Segregation in Smart Cities The present invention relates to a smart waste segregation system designed for public environments such as malls, office buildings, tourist areas, and institutional campuses. The system, named SmartBinX, uses an microcontroller unit (e.g., ESP32 or equivalent) to capture an image of a waste object placed on a rotating platform. Upon detection by an infrared sensor, the image is sent to a cloud-based AI model which classifies the object into one of four categories: wet, dry, glass, or metal. Based on this classification, a motor driver/PWM module actuates two motors — one for rotating the platform and the other for tilting it — to direct the object into the appropriate waste compartment. Four ultrasonic sensors monitor bin fill levels, and an LED confirms successful operation. The system is built using low-cost components and achieves full functionality at a cost of under ₹3,500, making it ideal for scalable, autonomous waste segregation in high-traffic public areas.

No. of Pages : 27 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/09/2025
(21) Application No.202541092320 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Smart Logistics Vehicle

(51) International classification	:G05D0001000000, G05B0019418000, G06Q0010063100, G06Q0010060000, H04W0004380000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Smart Logistics Vehicles are a modern innovation in industrial automation, aimed at improving the internal movement of goods in factories and warehouses. Unlike manual transport systems, these autonomous vehicles integrate sensors, microcontrollers, and IoT-based wireless communication to ensure efficient, safe, and flexible material handling. The proposed system features real-time obstacle detection using IR sensors, temperature monitoring, live status display on an LCD, and remote operation through Wi-Fi connectivity. By reducing downtime, minimizing human involvement in risky areas, and lowering operational costs, the vehicle enhances both productivity and workplace safety. The prototype demonstrates energy-efficient and sustainable logistics solutions, while also serving as a scalable model for future applications. Potential extensions include GPS integration for outdoor navigation, AI-based smart routing, and coordinated fleet deployment, making it adaptable to industrial, agricultural, and residential environments.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/09/2025
(21) Application No.202541092335 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Cloud Foundation Platform and A Method for Managing Resource Deletion Workflows

(51) International classification	:G06F0009500000, G06Q0010063300, H04L0009400000, H04W0088080000, G06Q0010000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Mathanraj K A
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(57) Abstract :
A Cloud Foundation Platform and A Method for Managing Resource Deletion Workflows A cloud platform (200) and a method (1000) are disclosed for managing lifecycle operations (204) of a cloud foundation (208) comprising interoperable infrastructure service (212) within an IT infrastructure (600). A workflow routing module (224) provides a user interface (228) to receive deletion requests (232), integrates with an orchestration layer (244), and routes requests through a predefined approval chain (248) defined by tenant-specific governance policies (252). A control module (268) enforces compliance (332), monitors approval workflows (276), and permits deletion activities (280) only upon successful approval (348). An approval logging module records decisions with metadata for auditability. A unified dashboard module (288) provides centralized access to lifecycle operations, configuration management, and monitoring across multiple request sources (408) and integration mechanisms (448). Figure 1

No. of Pages : 34 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/09/2025
(21) Application No.202541092345 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Foot-Operated Compact Desalination Apparatus for Potable Water Generation

(51) International classification	:C02F1/44, C02F1/26, C02F1/28, C02F9/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Vijaykumar G

(57) Abstract :
ABSTRACT Foot-Operated Compact Desalination Apparatus for Potable Water Generation The desalination apparatus (100) offers a self-sufficient potable water solution for remote coastal and island communities. Seawater is manually pressurized via a foot pump (1) and pre-filtered through sand and activated carbon (2) to remove impurities. A reverse osmosis membrane (3) then separates salt ions, yielding purified water stored in a dedicated reservoir (4) for immediate use. Fig.3

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/09/2025
(21) Application No.202541092368 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "A Titanium(IV) N-Heterocyclic Iminato Complex and the method for its preparation"

(51) International classification	:C07F7/28, B01J31/22, C07F7/00, C08F4/76, C07F19/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Priyanka V
3)Dr. Abir Sarbajna

(57) Abstract :
The present invention relates to a Titanium(IV) N-Heterocyclic Iminato Complex (2) of the general formula $[(L)_2Ti(NMe_2)_2]$ [2], where each L (1) is an N-isopropyl-substituted perimidin-2-iminato ligand. In the complex (2), the titanium center (3) is coordinated in a distorted tetrahedral geometry via two monodentate iminato ligands (1) and two N,N-dimethylamido ligands (4). The complex (2) is synthesized by reacting tetrakis(dimethylamido)titanium(IV) (5) with two equivalents of the ligand precursor (LH) (6) in toluene (7) at ambient temperature, followed by solvent removal and recrystallization at low temperature to afford X-ray quality crystals in high yield (87%). The complex (2) exhibits high thermal and structural stability, making it a promising candidate for applications in catalysis and materials science. Fig 1 to 4

No. of Pages : 24 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202541092370 A
(19) INDIA
(22) Date of filing of Application :26/09/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEVELOPING AN BLUETOOTH CAR CONTROLLER USING ARDUINO UNO

(51) International classification	:G05D0001000000, B25J0019020000, G06F0003140000, G01C0021000000, H04Q0009000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)R.LAL ARJUN
4)R.RAHUL

(57) Abstract :
This project involves the creation of a Bluetooth-controlled vehicle designed to receive wireless instructions for both direction and speed control. The system enables the car to move in all basic directions—forward, backward, left, and right—while also allowing real-time adjustments to its speed through a Bluetooth-enabled device such as a smartphone. By removing the need for physical connections, the project highlights the advantages of wireless technology in embedded system applications and user interaction. In addition to remote control, the project opens doors for more advanced developments in the fields of automation and robotics. It lays the groundwork for integrating features like obstacle detection using sensors, GPS-based route navigation, and potential autonomous driving capabilities. As a prototype, this system provides an ideal starting point for students and developers interested in exploring smart vehicle technology and intelligent control systems.

No. of Pages : 14 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/09/2025
(21) Application No.202541092371 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “A satellite system configured for deorbiting from very Low Earth Orbit (VLEO)”

(51) International classification	:B64G1/10, B64G1/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a satellite deorbiting system for CubeSats and other small satellites operating in Very Low Earth Orbit (VLEO). The system employs a cube-shaped fiber drag module (3) integrated with the satellite body (1) and deployable by a DC actuator (2). The fiber drag module comprises lightweight, atomic oxygen (AO)-resistant fibers configured to increase the effective surface area of the satellite and enhance atmospheric interaction, thereby accelerating orbital decay. An onboard accelerometer sensor (4) continuously monitors drag-induced acceleration, and an ARM Cortex CPU (5) processes the sensor data to compare with a predetermined threshold value, typically 1.5×10^{-4} m/s² at approximately 250 km altitude. Upon exceeding the threshold, the CPU (5) commands deployment of the fiber drag module (3), which generates turbulent wake patterns and increases drag force acting on the satellite. The system is modular, autonomous, and adaptable to CubeSats of different sizes, eliminating the mechanical complexity and reliability issues of conventional deployable drag sails or booms. This invention enables controlled, passive disposal of satellites, ensuring compliance with space debris mitigation guidelines. Fig 1 to 4

No. of Pages : 20 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/09/2025
(21) Application No.202541092564 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN ELECTROMAGNETICALLY ACTUATED HEAT PIPE ASSEMBLY FOR SPACE THERMAL CONTROL APPLICATIONS

(51) International classification	:F28D15/06, F28D15/02, F28D21/00, H01L23/427, H10W40/73
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)R. Jayaseelan

(57) Abstract :
The present invention relates to an electromagnetically actuated heat pipe assembly for space thermal control applications, comprising a grooved heat pipe (1) with a solenoid coil (2); an evaporator (3); a condenser (4); a piston (5); a nozzle (6) with two arms (6a and 6b); a thermocouple wire (7); and an inlet and outlet coolant port (10a and 10b). Inner wall of the heat pipe (1) is provided with axial micro-grooves (1a). The nozzle (6) and piston (5) arrangement are placed inside the grooved heat pipe (1) at the end of an adiabatic section. The solenoid coil (2) is positioned around the adiabatic section of the heat pipe (1) outside the nozzle (6) and piston (5) arrangement. The thermocouple wire (7) is placed on the evaporator (3) surface of the heat pipe (1) and is attached to an Arduino UNO (8) and a DC power supply (9). Figure 3.

No. of Pages : 20 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/09/2025
(21) Application No.202541092600 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An Analysis of Advanced 3D Printing Framework for Customized Manufacturing

(51) International classification	:B33Y30/00, B33Y50/02, B33Y50/00, B33Y99/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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5)Mr.R.SUDALAIMANI
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(57) Abstract :
ABSTRACT An Analysis of Advanced 3D Printing Framework for Customized Manufacturing This article proposes a cutting-edge framework for personalized manufacturing that employs 3D printing techniques, which incorporates artificial intelligence, the Internet of Things (IoT), and sophisticated material science in order to improve accuracy, scalability, and efficiency. The framework that has been suggested includes a Smart Additive Manufacturing Engine (SAME) that integrates artificial intelligence (AI)-based design optimization, real-time monitoring with Internet of Things (IoT) sensors, and automated post-processing modules. The framework provides support to industries such as healthcare, aerospace, automotive, and consumer products by making it possible to produce complicated geometries and functional components in a highly customizable manner. In addition to these advantages, the innovation addresses the limits of traditional manufacturing, such as the considerable amount of material that is wasted, the lengthy lead times, and the lack of flexibility in the design. The solution guarantees accuracy, minimizes expenses, and increases sustainability through the use of adaptive learning algorithms and digital twin integration.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/09/2025
(21) Application No.202541092604 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PhotonPack – A Pocket Solar Power Source for Portable Electronic Devices

(51) International classification	:H02J7/35, H02S40/38, H01M10/46, G05F1/67
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract The invention relates to a portable solar charging device, designated as PhotonPack, designed to provide efficient, sustainable power for small electronic gadgets. The device integrates a photovoltaic solar panel, a maximum power point tracking (MPPT) charge controller, a rechargeable lithium-ion battery, and universal serial bus (USB) output ports into a compact enclosure. The solar panel harvests sunlight and converts it into electrical energy, which is optimized by the MPPT controller to maximize energy extraction under varying irradiance conditions. The regulated energy is stored in the lithium-ion battery, ensuring continuous availability of power, even in the absence of sunlight. The stored energy is supplied through standard USB ports, delivering 5V output for compatibility with smartphones, tablets, and other electronic devices. The device is lightweight, durable, and weather-resistant, making it ideal for outdoor activities, travel, and emergency use. The PhotonPack offers an eco-friendly alternative to conventional power banks while promoting renewable energy adoption.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/09/2025
(21) Application No.202541092605 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT ADAPTIVE CONTROL SYSTEM FOR COUPLED INDUCTOR DC-DC CONVERTERS IN ELECTRIC HYBRID VEHICLES USING DEEP REINFORCEMENT LEARNING AND PREDICTIVE MAINTENANCE

(51) International classification	:G06N0003045000, G06N0003080000, G06N0003047000, G06N0003006000, G06Q0050060000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr.Elankurisil.S.A

(57) Abstract :
ABSTRACT The present invention discloses an intelligent adaptive control system for coupled inductor DC-DC converters specifically designed for electric hybrid vehicle applications, integrating advanced artificial intelligence methodologies to achieve superior power conversion performance and predictive maintenance capabilities. The system employs a deep reinforcement learning framework using Proximal Policy Optimization algorithm that processes an 18-dimensional state space including electrical parameters, thermal conditions, component health indices, and predicted load demands to generate optimal control actions for duty cycle and switching frequency modulation. The core innovation combines real-time adaptive control with comprehensive health monitoring through multi-modal sensor fusion. An LSTM-based load forecasting module predicts power demand patterns 0.3ms ahead with 8% mean absolute percentage error, enabling proactive control adjustments. A CNN-based thermal analysis module processes 224×224 thermal images to detect hotspots and thermal anomalies with 94% precision, while a Variational Autoencoder analyzes electrical telemetry for fault detection with 3% false positive rates. The physics-informed reward function simultaneously optimizes converter efficiency, voltage ripple minimization, thermal management, and component longevity through weighted multi-objective optimization. Barrier function-based constraint handling ensures safe operation within physical limits during both training and deployment phases. Experimental validation using a 5kW prototype demonstrates exceptional performance improvements: 12-18% efficiency enhancement achieving 96.8% peak efficiency, 60% faster dynamic response with 2ms settling time, 22-28°C component temperature reduction, and 45% component lifetime extension. The integrated health monitoring system provides 150-200 hours early fault warning with 87% RUL prediction accuracy, resulting in 68% unplanned downtime reduction and 40% maintenance cost savings. The system is implemented on a hybrid DSP-FPGA platform combining Texas Instruments TMS320F28379D for real-time control and Xilinx Zynq UltraScale+ for AI acceleration, making it suitable for automotive-grade applications requiring high reliability and performance. KEYWORDS: Deep Reinforcement Learning, Coupled Inductor DC-DC Converter, Electric Hybrid Vehicles, Proximal Policy Optimization, LSTM Load Forecasting, CNN Thermal Analysis, Variational Autoencoder, Predictive Maintenance, Health Index, Remaining Useful Life, Multi-modal Sensor Fusion, Physics-informed Control, Barrier Functions, Real-time Optimization, Power Electronics, Automotive Applications, Artificial Intelligence, Machine Learning, Thermal Management, Fault Detection

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/10/2025
(21) Application No.202541097960 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR A DIGITAL CUTTING BOARD APPARATUS

(51) International classification	:A47J0047000000, G16H0020600000, H04W0004800000, G06Q0050120000, A61L0002100000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention discloses a digital cutting board that integrates multiple kitchen tools into a single device. The cutting board includes an integrated scale for precise measurement of ingredients, a dynamic display screen 203 for real-time cooking guidance, and a removable cutting surface 205 for easy cleaning and hygiene. The system incorporates a connectivity module 207 for syncing with external devices and a Adaptive sanitizer unit 209 to sterilize the cutting surface. The integrated scale provides accurate weight measurements displayed on the dynamic display screen 203. The connectivity module 207 allows the board to interface with smartphones or tablets, providing access to recipes and nutritional information. The Adaptive sanitizer unit 209 reduces bacterial contamination, promoting food safety. The non-slip base ensures stability during use. (FIG. 2)

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/10/2025
(21) Application No.202541098271 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Integrated wearable elder care system and method thereof

(51) International classification	:G08B0021040000, G08B0025010000, A61B0005000000, A61B0005110000, G10L0015220000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Adithya Jayaraman
4)Saanchi Rai
5)Saurav Das

(57) Abstract :
Abstract Integrated wearable elder care system and method thereof The present invention discloses an integrated wearable elder care system and method that addresses challenges faced by the elderly, including limited mobility, memory decline, and fall risks. The system (100) includes a voice-enabled control module (102) for hands-free appliance control and emergency alerts, a voice-activated imaging module (104) with smart glasses for voice-triggered image capture and cloud storage, and a fall detection module (106) that uses belt-mounted sensor array and machine learning for real-time fall detection. An alert and assistance module (108) transmits critical notifications, including geolocation, to caregivers via SMS, email, or phone calls upon a fall or emergency. The entire system is operable through a mobile application (112), which provides comprehensive monitoring, image access, and alert management. The invention emphasizes local, offline processing for reliability and incorporates data collection, training, and evaluation methodologies for its machine learning components. (To be published with FIG. 1)

No. of Pages : 33 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/10/2025

(21) Application No.202541103535 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for emergency vehicle management and patient health monitoring

(51) International classification	:B60K 28/14, B60Q 7/00, G08G 1/0965, H04W 76/50, B60Q 1/52
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract System and method for emergency vehicle management and patient health monitoring The present invention discloses a system and method for emergency vehicle management and patient health monitoring. The system (100) comprises an RF transmission module (102) with a directional switch generates unique, authenticated RF codes corresponding to the intended travel direction of the emergency vehicle. A traffic control receiver (104) validates incoming RF codes, executes arbitration logic to resolve multiple requests, and switches the corresponding traffic light to a priority state, with automatic timeout-based restoration to normal cycles. Simultaneously, at least one biomedical sensor (106) monitors patient vital parameters such as oxygen saturation and electrocardiogram signals, the data being processed, filtered, and displayed in real time on a display unit (108). A wireless communication interface (112) transmits structured telemetry packets, including timestamp and ambulance identification, to a hospital monitoring station over Wi-Fi. A backup power module ensures uninterrupted operation.

No. of Pages : 40 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/10/2025
(21) Application No.202541104868 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM FOR CUSTOMIZABLE EXTRACORPOREAL MAGNETO-TRANSDUCTION THERAPY WITH INTEGRATED EMG BIOFEEDBACK AND ADAPTIVE DUAL-COIL TECHNOLOGY

(51) International classification	:A61M 21/02, H03K 5/1254, G10L 21/013, H01S 1/00, F03G 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Arjun Katwa

(57) Abstract :
ABSTRACT SYSTEM FOR CUSTOMIZABLE EXTRACORPOREAL MAGNETO-TRANSDUCTION THERAPY WITH INTEGRATED EMG BIOFEEDBACK AND ADAPTIVE DUAL-COIL TECHNOLOGY A customizable extracorporeal magneto-transduction therapy system is disclosed for delivering biphasic magnetic pulses, featuring a high-voltage capacitor bank charged via a custom-designed transformer equipped with NTC resistors and a snubber circuit, and a pulse generation circuit with charging and discharging switches discharging energy through an LC network to both a first stimulation coil and a second stimulation coil via a diode. A variable capacitance topology using capacitor groups reconfigured by microcontroller-controlled switches etc. permits adjustment of the discharge time constant, while a zero-crossing detection circuit synchronizes events and an integrated HMI with EMG electrodes provides real-time biofeedback, with additional isolation and protection circuitry ensuring safe operation.

No. of Pages : 39 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/10/2025
(21) Application No.202541105743 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYBRID MESH-BASED INTERNET-FREE DISASTER COMMUNICATION AND ALERT SYSTEM

(51) International classification	:H04W 84/18, H04W 4/90, G08B 25/10, H04L 67/104, H04W 12/03
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The project focuses on developing a Hybrid Mesh Based Internet Free Disaster Communication and Alert System aimed at enabling uninterrupted communication during emergency situations when traditional networks fail. During natural disasters, mobile networks and internet connectivity are often disrupted, severely affecting rescue operations and coordination. To ov ercome these challenges, this project introduces an innovative offline communication system that utilizes Bluetooth and Wi Fi Direct to establish a peer to peer mesh network for message transmission.The proposed system allows users to send SOS alerts and s afety messages that are relayed automatically between nearby devices without requiring internet access. Once any device within the network regains connectivity, all collected alerts are synchronized to a central cloud based rescue server , ensuring that cri tical information reaches authorities promptly. The application employs Android based development with native Bluetooth and Wi Fi APIs , incorporating store and forward mechanisms , data encryption , and location tracking to enhance reliability and security.B y combining local mesh networking with cloud synchronization, the system provides a low cost, scalable, and resilient solution for disaster management. This project demonstrates the potential of integrating hybrid communication technologies to maintain con nectivity, improve rescue response times, and enhance community safety during crises.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/11/2025
(21) Application No.202541105996 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD & APPARATUS FOR ONE OR MORE WIND TUR-BINES MONITORING

(51) International classification	:F03D17/00, F03D80/00, H04N23/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Harender Singh

(57) Abstract :
METHOD & APPARATUS FOR ONE OR MORE WIND TURBINES MONITORING The present disclosure provides a method and system for monitoring multiple wind turbine generators in a windfarm over a complete 24-hour cycle. The system com-prises a data acquisition module configured to collect and store time-stamped opera-tional parameters including rotor speed, generator speed, power generated, nacelle orientation, yaw angle, cable twist, rotor imbalance and meteorological data such as wind velocity, direction, humidity, and temperature. A synchronization protocol is implemented to align the collected datasets before transmission. The communication module is configured to transmit synchronized data through low-bandwidth short message service (SMS), Unstructured Supplementary Service Data (USSD), or conventional internet protocols to ensure reliable delivery under varying or hybrid network conditions. A visualization interface is provided for real-time performance tracking across the windfarm and for detecting risks arising from optical fiber cable disconnection. The system is further configured to identify opera-tional anomalies, support predictive and corrective maintenance scheduling, and op-timize energy output through data-driven analysis. The invention thereby enhances windfarm management by improving fault detection accuracy, reducing maintenance response time, and increasing energy production efficiency, particularly in remote or network-constrained installations.

No. of Pages : 58 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/11/2025
(21) Application No.202541107003 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SOIL STABILIZATION COMPOSITION FOR IMPROVING EXPANSIVE SOILS

(51) International classification	:C09K17/40, C09K17/42, C09K17/46, C09K17/40, C09K17/06, C09K17/18, C09K17/32, C09K17/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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2)T SARADA
3)V SWATHI
4)K Roja
5)M.Mounika
6)ASHWIN KUMAR MOGULAMADAKA
7)P. Rohith Kumar

(57) Abstract :
ABSTRACT The present invention discloses a soil stabilization composition (100) specifically formulated for improving expansive soils including black cotton soil, clayey soil, and loamy soil. The composition (100) comprises bagasse ash (104) functioning as a pozzolanic additive capable of reacting with soil minerals to form cementitious compounds; iron dust (106) functioning as a densifying and reinforcing agent adapted to fill soil voids and enhance interparticle friction; Zyco Bond (108), a nano-polymer emulsion functioning as a chemical stabilizer adapted to penetrate soil pores, impart hydrophobic bonding, and improve cohesion; and calcium chloride (110) functioning as a hygroscopic agent adapted to regulate moisture content, minimize swelling and shrinkage, and enhance frost resistance. The synergistic interaction of these components collectively improves soil density, reduces plasticity index and swelling potential, enhances unconfined compressive strength and California Bearing Ratio, and provides durable, long-term, and eco-friendly stabilization suitable for diverse geotechnical applications including road subgrades, embankments, pavements, and building foundations. The figure associated with the abstract is Fig.1

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/11/2025
(21) Application No.202541107004 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EMINENT SUPERFLUOUS ALERT SYSTEM

(51) International classification	:B67D 7/46, D06F 103/60, H04L 41/0803, H04L 41/0866, F25C 5/187
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)K. SHIREESHA
5)G. NIRMALA JOYCEE
6)K. SPANDANA KUMARI
7)DR.P. MADHURI PAUL
8)CHITTIPOTHULA RAMAKRISHNA
9)POTLA GANESH
10)SHINDE AMBIKA

(57) Abstract :
7. ABSTRACT The present invention relates to an Eminent Superfluous Alert System (ESAS) (100) designed for intelligent and automated waste monitoring and alert management. The system (100) comprises an ultrasonic sensor (101) configured to detect the fill level of a garbage bin, an ESP8266 microcontroller (102) that processes sensor data and triggers alerts when a predefined threshold is reached, and a buzzer (103) providing an audible indication of a full bin. A Blynk application module (104) transmits real-time data to a user interface (105) for remote monitoring and alert display. The system optionally includes a moisture sensor for distinguishing between wet and dry waste and a servo motor for directing waste into respective compartments. A cloud-based data management platform stores and analyses data from multiple bins for predictive analysis and route optimization, ensuring timely waste collection, improved efficiency, and sustainable environmental management. The figure associated with abstract is Fig. 1.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/11/2025
(21) Application No.202541107005 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART AUTOMATIC DRUG DISPENSER

(51) International classification	:G07B 5/04, G07B 1/00, G07B 3/00, G07B 11/00, G07B 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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3)DR K.RAJESH KANNAN
4)S.DIVYA
5)M.VIJAYA
6)PKV.SUBBARAYA SARMA
7)RAJASHEKAR PARUPATI
8)V.NARSING RAO
9)YOGESH RAGHAVWAR
10)K.RADHIKA

(57) Abstract :
7. ABSTRACT The present invention relates to a Smart Automatic Drug Dispenser designed to automate the process of medicine distribution in healthcare environments. The system integrates with hospital digital infrastructure, wherein doctors (104) issue electronic prescriptions (106) that are converted into secure QR codes (112). Patients scan these codes at the dispenser (114), which verifies the prescription, authenticates the patient, and dispenses the prescribed medicines in accurate quantities without manual intervention. The invention incorporates modules for real-time inventory monitoring, stock updates, and expiry alerts while ensuring data security through encryption and controlled access (108). By reducing patient waiting time, minimizing dispensing errors, and enabling seamless integration with hospital information systems, the invention improves patient convenience, enhances medication safety, and supports the digitization of healthcare delivery. The system is scalable for use in hospitals, clinics, rural health centers, and telemedicine kiosks, thereby aligning with the vision of smart hospitals and digital health ecosystems. The figure associated with abstract is Fig. 1.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/11/2025
(21) Application No.202541107010 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VERSA UTILITY – A 6-IN-1 PORTABLE MEDICATION PREPARATION AND ADMINISTRATION DEVICE FOR SAFE TABLET CUTTING, CRUSHING, WEIGHING, LIQUID DISPENSING, AND STORAGE

(51) International classification	:A61J3/02, A61J3/00, A61J1/03, A61J7/00, G01G19/52
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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Address of Applicant :SRI RAMACHANDRA INSTITUTE OF HIGHER EDUCATION AND RESEARCH (DEEMED TO BE UNIVERSITY), NO.1, RAMACHANDRA NAGAR, PORUR CHENNAI CHENNAI TAMIL NADU INDIA 600116 Chennai Tamil Nadu India
(72)**Name of Inventor :**
1)R. RENUKA
2)DR. RENUKA MK

(57) Abstract :
TITLE: VERSA UTILITY – A 6-IN-1 PORTABLE MEDICATION PREPARATION AND ADMINISTRATION DEVICE FOR SAFE TABLET CUTTING, CRUSHING, WEIGHING, LIQUID DISPENSING, AND STORAGE APPLICANT: SRI RAMACHANDRA INSTITUTE OF HIGHER EDUCATION AND RESEARCH ABSTRACT The present invention discloses a multifunctional medication preparation and administration (VERSA Utility) device. The invention provides a housing body made of medical-grade ABS plastic, incorporating: • A tablet cutting unit with a hinged cover and stainless-steel blade. • A tablet crushing and blending chamber with a motor-driven blade, operable by battery or micro-USB. • An ampule cutting assembly with a tungsten carbide blade and safety lock. • A digital weighing module with LED display. • A liquid measuring container of 100 mL capacity with calibrated markings. • A storage compartment for tablets or capsules. The arrangement of these components within a single housing ensures continuity of workflow, aseptic handling, and safe medication preparation.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/11/2025
(21) Application No.202541107232 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR SECURE REMOTE CANDIDATE ASSESSMENT WITH HARDWARE-ROOTED TRUST AND PREDICTIVE ORCHESTRATION

(51) International classification	:H04N 21/241, H04W 76/12, H04W 76/14, H04W 76/18, H04W 76/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)ARIJIT RAHUT

(57) Abstract :
ABSTRACT A SYSTEM AND METHOD FOR SECURE REMOTE CANDIDATE ASSESSMENT WITH HARDWARE-ROOTED TRUST AND PREDICTIVE ORCHESTRATION A secure candidate assessment system (100) and method for fraud-resistant remote evaluations through a hardware-rooted verifiable chain-of-trust (HRVCT). The system integrates a multi-camera setup (128, 129, 130, 131) with a sensor fusion module (105) and an AI-driven predictive field-of-view orchestrator (AFOV-Orchestrator) (110) for dynamic hardware adjustments based on biometric-emotion cues (106, 107) and fraud risk scores (145), a fraud detection module (101) with object detection, gaze tracking, and audio-visual correlation, and an emotion mapping engine (107) using graph neural networks with neuro-symbolic explainable AI (XAI) for adaptive task validation. An AI grading engine (118) evaluates responses with bias mitigation and is updated via encrypted federated learning (121) with a model provenance ledger (122) for privacy-preserving, poison-resistant model updates. A security module (123) with zero-knowledge proof anchor (126) ensures tamper-proof audits. The portable 360° smart camera (131) with embedded sensors (132, 133, 139) enables scalable deployment. The system ensures robust fraud prevention, fairness, and low-latency performance in untrusted networks for global recruitment and testing scenarios. Figure no. 02

No. of Pages : 31 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/11/2025

(21) Application No.202541108246 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Multi-Purpose Musical Carpet

(51) International classification	:H04L 41/0859, G10D 15/00, B64U 40/20, G10D 13/01, G10D 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Saroja Pochampally

(57) Abstract :
Title: Multi-Purpose Musical Carpet A Multi-Purpose Musical Carpet comprising; sensing panels (101) and the free space (102), combined together to form a carpet with foldable property, wherein the sensing panels are configured to generate different musical notes based on the pressure/stress received by corresponding sensing panels. The Multi-Purpose Musical Carpet, wherein the sensing panels are arranged on the carpet for various Carnatic Ragas or Hindustani Ragas. The Multi-Purpose Musical Carpet, wherein the sensing panels are arranged in a sequential manner on the carpet, each of the panels are assigned with the musical notes Sa Ri Ga Ma Pa Da Ni. The Multi-Purpose Musical Carpet, wherein the sensing panels are arranged in a sequential manner on the carpet, each of the panels are assigned with the musical notes of lower, middle and higher octaves. The Multi-Purpose Musical Carpet, wherein the sensing panels are arranged on the carpet for various dancing forms and physical exercises. FIG.1

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/11/2025
(21) Application No.202541108603 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI-FUNCTION GENERAL PURPOSE VEHICLE-TO-EVERYTHING (V2X) ON-BOARD-UNIT (OBU)

(51) International classification	:H04L 51/21, H04L 51/216, H04L 51/234, H04L 67/147, H04L 51/224
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Bhargava S Hegde
2)Sujan Bharadwaj
3)Vrishank Bhargav
4)Anvith Kashyap

(57) Abstract :
MULTI-FUNCTION GENERAL PURPOSE VEHICLE-TO-EVERYTHING (V2X) ON-BOARD UNIT (OBU) A general-purpose V2X on-board unit (OBU) that executes multiple application functions on a single hardware unit via a management-first transaction layer that precedes protocol handling. Each message carries an Initial-Transaction-Address (ITA) encoding source-domain, device origin, V2X profile and an access-scope bitmask; a policy-enforcement engine gates per-message interaction with vehicle subsystems to enable least-privilege control and auditability. A deterministic multi-radio scheduler selects among DSRC/ITS-G5, C-V2X PC5/Uu, Wi-Fi and Bluetooth based on priority, channel state and latency bounds, with failover for safety-critical traffic. The architecture supports interoperable V2V, V2I, V2N, V2P, V2G and V2H communication and allows multiple use-case features without hardware redesign. Figure of abstract: FIG. 1.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/11/2025
(21) Application No.202541109149 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SPINEL FERRITE BASED PHOTOCATALYSTS FOR HYDROGEN GENERATION AND A METHOD OF PREPARATION THEREOF

(51) International classification	:B82Y30/00, B82Y40/00, B01J35/45, B01J35/39, C01G49/06, C01B3/02, C01B3/046, B01J23/745
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)RAJI R
3)SAJESH SASIDHARAN
4)ANJANA J M
5)SABIN B S

(57) Abstract :
A cobalt-doped zinc ferrite spinel photocatalyst is disclosed for efficient solar-driven hydrogen generation. The photocatalyst includes Zn1??Co?Fe2O4 nanostructures, where x ranges from 0.001 to 0.003, exhibiting a hierarchical flower-like morphology with an average particle size of 30–36 nm. The photocatalyst has a narrow optical band gap in the range of 1.73–1.79 eV and strong light-harvesting capability, including two prominent near-infrared absorption bands spanning 900–1300 nm and 1550–1700 nm. A controlled co-precipitation and thermal treatment method is provided for synthesizing the nanostructures with precise compositional and morphological control. The photocatalyst enables hydrogen generation from pure water under solar irradiation, including NIR wavelengths, without sacrificial agents, operating at near-ambient temperature and neutral pH. The disclosed composition and method offer a robust, scalable, and cost-effective approach for sustainable hydrogen production using broad-spectrum solar energy.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/11/2025
(21) Application No.202541113380 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CONVERSION SYSTEM FOR RETROFITTING A PETROL-ENGINE MOTORCYCLE WITH GEARBOX TO ELECTRIC POWER

(51) International classification	:G06Q 30/015, F16H 7/14, B61C 9/48, B65G 23/36, F16H 9/18	(71)**Name of Applicant :** **1)Vivek Kumar Kotekal** Address of Applicant :No. 13, 3rd Floor, Laxminarsimha Nilaya, 2nd Main, 1st Cross, S.M. Road, T-Dasarahalli, Bangalore- 560057, Karnataka, India Bangalore Karnataka India (72)**Name of Inventor :** **1)Vivek Kumar Kotekal**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present invention provides a conversion system for a geared petrol-engine motorcycle, wherein the engine is replaced with dual 3 kW BLDC motors mounted on opposite sides of the motorcycle frame. Each motor drives a customized crankshaft via a pulley belt arrangement comprises a 32-tooth aluminium pulley and a 12-tooth high carbon steel pulley section, achieving a 3:1 gear ratio. An isolated crankcase with sealed ball bearings prevents oil ingress and protects the belt drive. Opposite motor polarity balances torque, while dual controllers synchronize operation and ensure stable performance. The system retains gearbox functionality, achieves a riding range of 60–80 km per charge, and reduces CO_2 emissions by approximately 47%, thereby providing an efficient and eco-friendly motorcycle conversion solution.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/11/2025

(21) Application No.202541113584 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Silt Segregation Device for Duct(s) Off-taking From Open Channels

(51) International classification	:E02B5/08, E02B13/00, E02B3/02, E02B8/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)RAMACHANDRULA, Venkata Ramamohan

(57) Abstract :
A silt segregation device (100) for duct(s) off-taking from a channel (110) of an irrigation canal is disclosed. Said device (100) comprises of a partition (140), a slot (120) and a duct (130). The partition (140) is erected on a bed (110a) of the channel (110) and is positioned between extreme edges (110b, 110c) of the channel (110) and is configured to restrict downstream flow of water. The slot (120) is formed on the partition (140) and aligned with the bed (110a) of the channel (110) and is configured to segregate silt particles and to eject the silt particles from or to retain the silt particles within the downstream flow of the channel (110). The duct (130) is placed at an elevation from the bed (110a) and is affixed to the partition (140) and is configured to divert and transport silt-free water from the downstream flow of channel (110). Figure 1

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2025
(21) Application No.202541116368 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR GENERATING SLICING DATA FOR DIRECTED ENERGY DEPOSITION ADDITIVE MANUFACTURING

(51) International classification	:G10H 7/10, G10L 25/75, G10H 7/12, H01F 41/00, C05F 17/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)VICHARAPU, Buchibabu
2)MOHAMMAD, Shabbar

(57) Abstract :
A system (100) and a method (600) for generating slicing data (112) for wire based directed energy deposition additive manufacturing includes an input interface (108) to receive a computer-aided design model, process parameters, and material properties, a memory (106) storing a physics-based layer-geometry model, and a processor (104) configured to execute the model. The processor (104) determines a melt pool cross-sectional area by combining deposition and penetration contributions while accounting for capillary forces and gravitational effects, predicts a stabilized layer height for multi-layer deposition together with the process parameters and the material properties, and generates the slicing data (112) for the computer-aided design model using the stabilized layer height in preference to bead-on-plate layer dimensions. The slicing data (112) may additionally encode torch height adjustments and be transmitted to a toolpath planning module (110) for generation of machine-executable instructions.

No. of Pages : 39 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/12/2025
(21) Application No.202541119730 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MRI SLICE LABELLING SYSTEM FOR PARKINSON'S DISEASE

(51) International classification	:A61B 5/055, A61B 5/00, G01R 33/56, G01R 33/48, G01R 33/28	(71)**Name of Applicant :** **1)RAJAGIRI SCHOOL OF ENGINEERING & TECHNOLOGY** Address of Applicant :RAJAGIRI VALLEY, KAKKANAD, KOCHI, KERALA, INDIA-682039 Kerala India (72)**Name of Inventor :** **1)Priya S** **2)Dr. Abraham Thomas** **3)Dr, Jayanthi V.S** **4)Aparna George**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
Parkinson's disease (PD) is a chronic, progressive neurodegenerative disorder that primarily affects motor function due to the degeneration of dopaminergic neurons in the substantia nigra region of the brain. Early and accurate diagnosis plays a crucial role in managing the condition and improving patient outcomes. However, Parkinson's is often difficult to diagnose in its initial stages, as clinical symptoms develop gradually and may resemble other neurological disorders. Magnetic Resonance Imaging (MRI) has become a valuable tool in neurological evaluation, offering detailed structural information of brain tissues. Although MRI alone cannot conclusively diagnose Parkinson's disease, specific brain regions such as the basal ganglia and substantia nigra show subtle structural and signal variations that can support clinical assessment. Manual examination of MRI slices is time-consuming, requires expert knowledge, and is prone to inter-observer variability....

No. of Pages : 5 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2025
(21) Application No.202541120432 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR ADAPTIVE LANGUAGE LEARNING USING REAL-TIME MULTILINGUAL UTILITY

(51) International classification	:G06Q50/20, G06F40/30, G06F40/40, G10L15/22, G06F16/3329
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Anitha Venkatraman

(57) Abstract :
The present invention relates to a system and method for adaptive language learning that integrates a real-time multilingual translation utility with a structured learning management platform. A user device, such as a smartphone or dedicated translator, includes a processor, touch display, microphone, secure storage enclave and a dedicated hardware activation control. When a user presses the control, the device captures a spoken or typed phrase, generates a translation, and automatically records a translation event containing the source phrase, translated phrase and context metadata. The event is securely stored and synchronized with a learning management server, where a personalization engine converts it into lesson items and an adaptive scheduler arranges them into review sessions for foundational English and foreign language tracks. Localized interfaces, biometric authentication and gamified feedback enhance usability and security. The invention thus bridges instant translation utility with continuous, context-aware language learning while being grounded in concrete hardware architecture. (Accompanied Figure No. 1)

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2025
(21) Application No.202541120509 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM,DESIGN AND METHOD OF DEVELOPMENT OF SOLAR-POWERED SMART PARKING SYSTEM WITH MOBILE MONITORING

(51) International classification	:G08G 1/14, H02J 7/35, E04H 6/42, H02S 40/38, G08G 1/017
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The patent disclosure covers System, Design and Method of Development of Solar-Powered Smart Parking System with Mobile Monitoring. The Solar Powered Smart Parking System with Mobile Monitoring represents a cutting-edge approach to efficient parking management, utilizing renewable energy and loT technology. Solar panels are utilized to produce and store energy, enabling the system to operate independently and promote sustainability. Each parking space is equipped with smart sensors that recognize the presence of vehicles and wirelessly transmit this information to a central control unit. A microcontroller processes this data and updates the real-time availability of parking spaces on a cloud server, which can be accessed through a mobile application. Users can check for available slots, reserve parking areas, and receive navigation assistance directly to their selected spots using GPS. Furthermore, the system features automated lighting powered by solar energy, which activates in response to vehicle detection or changes in ambient light. This eco-friendly design helps reduce energy consumption, eases traffic congestion, and improves smart city infrastructure through efficient, sustainable, and intelligent parking management. This innovation reduces energy usage, boosts parking efficiency, and lowers carbon emissions by integrating renewable energy, loT automation, and smart monitoring. The system can be implemented in public, commercial, and residential parking areas, offering a scalable and sustainable solution for modern smart city infrastructure.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2025

(21) Application No.202541120529 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SENSOR ASSISTED AUTOMATIC JAMUN FRUIT HARVESTER FOR ORCHARD APPLICATIONS

(51) International classification	:A01D 46/247, A01D 46/26, A01D 46/30, A01D 46/253, A01D 46/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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4)M.Mounika

(57) Abstract :
The Sensor-Assisted Automatic Jamun Fruit Harvester is an innovative orchard tool designed to overcome the limitations of conventional harvesting methods such as tree climbing, shaking, and manual stick beating, which often lead to fruit damage, slow harvesting, and labour risk. This project integrates sensor-based fruit detection, a motorized picking mechanism, and a microcontroller- controlled system to automate the harvesting process. The sensors identify ripe jamun fruits based on colour or proximity, enabling selective and precise harvesting. The picking head gently plucks the fruit and transfers it into a soft collection bag, reducing bruising and maintaining quality. The entire assembly is mounted on a lightweight telescopic pole, allowing harvesting from tall trees safely and efficiently. This technology reduces labour dependency, enhances harvesting productivity, and ensures high-quality fruit collectiomaking it suitable for small and large orchard applications. The system provides a cost-effective, portable, and user-friendly solution to modernize jamun harvesting practices.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2025

(21) Application No.202541120531 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND FABRICATION OF PNEUMATIC SEED BALL MAKING MACHINE

(51) International classification	:A01C 1/06, A01C 7/20, A01C 7/08, A01C 7/06, A01C 7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a pneumatic seed ball making machine designed to automate the formation of uniform seed balls for afforestation and agricultural applications. The system integrates a hopper-based feeding mechanism, a moulding unit, and a double-acting pneumatic cylinder controlled through a 4/2 directional control valve to achieve consistent compaction of the soil-binder-seed mixture. The machine ensures uniform size, improved compaction quality, and high production efficiency while minimizing manual effort. Its lightweight frame and low-cost pneumatic components make it suitable for small-scale farming, nurseries, and educational institutions. The invention offers an eco-friendly, energy-efficient solution for large-scale seed ball production to support reforestation initiatives and sustainable land restoration.

No. of Pages : 5 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2025
(21) Application No.202541120532 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A BIO-COMPOSITE MULTI-LAYER FILTRATION MEDIUM FOR WATER PURIFICATION

(51) International classification	:A01G 25/02, C02F 1/00, C02F 3/32, A01G 25/00, A01G 25/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Irrigation systems in agricultural fields frequently rely on water sources that contain suspended solids, organic matter, and fine sediments. These contaminants accumulate within drip and sprinkler emitters, causing clogging, reduced discharge, and uneven water distribution. Such inefficiencies ultimately affect crop growth, increase operational costs, and reduce the overall performance of irrigation networks. Addressing this issue requires a low-cost, chemical-free, and sustainable water treatment solution that can be deployed directly at the farm level. This innovation presents an eco-friendly, multifunctional cylindrical filtration system designed to treat low-quality irrigation water using only natural, biodegradable, and locally available materials. The system is engineered with a series of filtration layers including stones, rice husk ash, moringa seed powder, neem powder, activated charcoal, sand, cotton, and cloth. Each layer is purposefully selected for its specific functional role: stones enable coarse filtration; moringa and neem provide natural coagulation and antimicrobial activity; charcoal offers adsorption of impurities and odors; sand and ash reduce turbidity; and cotton delivers the final polishing to ensure uniform water clarity. The integrated performance of these natural materials provides effective removal of physical, chemical, and biological contaminants without the need for synthetic chemicals or advanced equipment. By converting agricultural by-products such as rice husk and moringa seeds into high-value filtration media, the system promotes circular-resource utilization and cost efficiency. This innovation enhances irrigation efficiency by minimizing emitter blockage, ensuring uniform water distribution, and supporting long-term sustainability in rural and farm-level water management. It serves as a practical, scalable, and environmentally responsible solution for improving the quality of irrigation water in resource-constrained agricultural settings.

No. of Pages : 9 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2025
(21) Application No.202541120534 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BIO DEGRADABLE SEED CAPSULE CONTAINING BIOCHAR AND VERMICOMPOST NUTRIENT MATRIX FOR ENHANCED GERMINATION

(51) International classification	:A01C 1/06, C05F 11/08, A01C 1/00, C05G 3/00, A01N 25/28
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)G. Priyanga

(57) Abstract :
The present invention discloses a Biodegradable Seed Delivery Apparatus designed for enhanced germination and accelerated early seedling vigor. The apparatus comprises a unitary, rapid-dissolving biodegradable capsule shell (2), preferably made of Gelatin, enclosing at least one agricultural seed (1). The novelty of the invention resides in a precisely formulated localized nutrient matrix (3) contained within the shell and surrounding the seed. This matrix is a synergistic mixture of vermicompost and biochar. The vermicompost provides immediate, highly bioavailable organic nutrients, essential microbes, and plant growth regulators necessary to initiate rapid seedling development. The biochar, with its high porosity and Cation Exchange Capacity (CEC), acts as a critical stabilizer, serving two primary functions: first, it provides exceptional moisture retention to prevent desiccation during the critical seed imbibition and germination phase; and second, it effectively prevents the leaching of high-value nutrients from the vermicompost. The nutrient matrix is formulated at an optimal ratio of 70% vermicompost to 30% biochar (by volume or mass). Furthermore, the matrix is preferably configured as a compacted, cohesive pelletized mass to ensure the sustained integrity of the localized micro-environment after the shell dissolves. Upon planting, the biodegradable shell dissolves in soil moisture, releasing the seed directly into the stabilized, slow-release nutrient matrix. This system overcomes the limitations of traditional seeding by providing a self-contained, precision-dosed unit that ensures the seed has consistent access to optimal moisture and sustained nutrition, resulting in significantly improved germination success and robust, vigorous seedlings ready for continued growth.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2025

(21) Application No.202541120640 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BUYWISE

(51) International classification	:G06Q 30/02, G06Q 10/08, G06Q 30/06, G06Q 30/00, G06Q 10/06	(71)**Name of Applicant :** **1)Dharaniya N.G** Address of Applicant :DHARANIYA N.G SRI SHAKTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY, SRI SHAKTHI NAGAR, L&T BY-PASS, CHINNIYAMPALAYAM POST, COIMBATORE - 641062 9080042457 dharaniyait@siet.ac.in Tamil Nadu India **2)Keerthana S** **3)Lathika P** **4)Mousika G**
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(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
BuyWise is a unified, web-based retail and e-commerce platform connecting customers, retailers, and employees in a single ecosystem. It integrates product management, inventory control, and sales operations for efficient retail workflows. The system supports real-time stock tracking, automated expiry alerts, and discount management for near-expiry goods. Customers can browse, purchase, and pay securely online via Razorpay. Retailers access analytics on sales performance and profitability. Employees manage product expiry, monitor inventory, and automate discount workflows. The backend is powered by Spring Boot and MongoDB ensures scalable data handling. RESTful APIs provide seamless real-time communication between modules. Role-based access with JWT tokens ensures secure authentication for all users. Overall, BuyWise enhances efficiency, reduces waste, and optimizes retail management in the digital marketplace.

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2025
(21) Application No.202541120641 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATION OF BASIC SIMULATION LAB AND DIGITAL SIGNAL PROCESSING LAB SYSTEM

(51) International classification	:G09B 7/02, G09B 7/04, G09B 7/00, G06Q 50/20, G06F 9/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an automated laboratory software system developed for conducting experiments in Basic Simulation Laboratory and Digital Signal Processing (DSP) Laboratory. The invention provides a unified software platform that automates experiment execution, learning, and evaluation processes, particularly designed to assist slow learners in understanding laboratory concepts effectively. The system features an interactive graphical interface that displays: • The theory and learning objectives of each experiment, • The source code required for simulation, and • A set of viva-voce questions with model answers for self-assessment. The software allows students to execute simulations, visualize results, and automatically generate laboratory reports without manually writing extensive code. It includes step-by-step guidance to help users perform experiments in a structured and error-free manner. For slow learners, the system provides simplified theoretical explanations, guided experiment procedures, and self-evaluation options that promote gradual and independent learning. The software reduces faculty workload, ensures uniformity in experimental execution, and enhances the overall quality of laboratory education. This invention enables educational institutions to conduct, monitor, and standardize simulation-based laboratory courses efficiently in both online and offline modes.

No. of Pages : 10 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120928 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BHOOMI – Bio Intelligent Harvest and Optimized Outcomes with Market Insights

(51) International classification	:G06Q 50/02, A01B 79/00, G06T 19/00, A01B 79/02, G06Q 10/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Agriculture faces increasing uncertainty due to climate change, unoptimized soil usage, and limited access to real-time data for small-scale farmers. BHOOMI is a bio-intelligent, AI-driven agricultural decision-support system designed to revolutionize sustainable farming through data fusion, visualization, and automation. The system enables farmers to upload a blueprint or aerial image of their farmland, along with its geo-coordinates and size. BHOOMI then processes this data through ISRO Bhuvan APIs, IMD weather feeds, and IoT sensor networks to analyse soil quality, terrain topology, hydrology, and environmental conditions. Using AI-powered AR/3D visualization, BHOOMI creates an interactive, 360° digital twin of the farm showing optimal cultivation zones, irrigation paths, soil nutrient layers, and predicted yield outcomes. The platform narrates results in a story-based advisory format, illustrating best-, average-, and worst-case harvest scenarios with tailored interventions for each along with the prediction of their revenue. Also provides the most important feature of disease detection as plant doctor by just analysing Plant leaf, steam and root. BHOOMI transforms raw land data into actionable insights — empowering farmers to make informed, sustainable, and profitable farming decisions.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541120961 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MEDICINE DONATION MANAGEMENT SYSTEM

(51) International classification	:G06Q 50/22, G16H 40/20, G16H 20/10, G16H 10/60, G16H 20/13
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The Medicine Donation Management System is an intelligent, user-friendly digital platform designed to streamline the collection, verification, and distribution of surplus medicines donated by individuals, pharmacies, and organizations. The system ensures that unused but safe medicines reach the right beneficiaries—such as NGOs, healthcare centers, and financially challenged patients—through a secure and transparent process. It integrates real-time inventory tracking, expiry validation, donor registration, request matching, and distribution workflows. This invention aims to reduce medicine wastage, promote community-driven healthcare support, and provide an ethical, organized method for managing pharmaceutical donations.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120963 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED GRAMMAR ASSESSMENT TOOL USING MACHINE LEARNING FOR ENGLISH LANGUAGE EVALUATION

(51) International classification	:G06N 20/00, G06F 40/00, G06F 17/27, G10L 15/18, G06F 40/253
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
Automated Grammar Assessment Tool Using Machine Learning for English Language Evaluation 10 15 CD ��) re 0. CD 20 The increasing demand for accurate and efficient English language assessment has led to the integration of machine learning techniques in automated grammar evaluation systems. This study proposes the development of an Automated Grammar Assessment Tool that utilizes Machine Learning (ML) algorithms to analyse, detect, and evaluate grammatical errors in English writing. The tool is designed to identify various grammatical components such as syntax, morphology, punctuation, and sentence structure errors while providing real-time corrective feedback. By employing supervised learning models trained on large linguistic corpora, the system can learn from annotated datasets and improve its prediction accuracy over time. Natural Language Processing (NLP) techniques, including tokenization, part-of- speech tagging, and dependency parsing, are implemented to enhance the tool�fs linguistic understanding. The model�fs performance is evaluated based on precision, recall, and Fl- score metrics to ensure CM E o and and reliability and consistency. The proposed system aims to assist language learners in enhancing their grammatical competence by data-driven feedback. Moreover, it can be integrated into online or writing assistance applications, offering scalable solutions for co CD O o CM 25 in CM o cs o CM in CM students, educators, providing objective learning platforms educational institutions and content developers. The study concludes that combining ML and NLP in grammar assessment not only reduces human effort but also fosters self-directed learning and linguistic accuracy. This research contributes to the advancement of intelligent language evaluation tools, aligning with the growing trend of digital education and automated linguistic analysis.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541120969 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MASTERING PERSONAL FINANCE,RECORDING AND GOAL ORIENTED BUDGETING

(51) International classification	:G06Q 40/00, G06Q 40/02, G06Q 10/10, G06Q 10/06, G06Q 10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Mastering Persona! Finance, Recording and Goal-Oriented Budgeting is a web-based financial management application designed to promote effective, organized, and goal-driven budgeting habits among individuals. The system addresses a common challenge faced by many users: the lack of a structured method for monitoring personal finances, resulting in uncontrolled expenses, poor decision-making, and difficulty in achieving long-term financial goals. To overcome these challenges, the application, provides an intuitive digital environment where users can systematically record income streams and daily expenditures, categorize transactions according to spending type, and track their current financial status. in CM o CM I o CD Q CO o ﷺ i 75 i p 7 The platform incorporates interactive dashboards that enable users to visualize * spending patterns, identify financial trends, and analyze their overall monetary' behavior. These dashboards transform raw financial data into meaningful insights, empowering users to evaluate how particular categories.such as food, transportation, entertainment, or savings-impact their financial health. By offering graphical representation of financial patterns, the system encourages reflective analysis and more informed financial decisions. To ensure reliability, security, and seamless operation, the application leverages Firebase services. Firebase authentication enables secure user registration and login, protecting sensitive financial information from unauthorized access. The use of Firebase Realtime Database or Cloud Firestore provides robust cloud-based data storage, ensuring that financial records are preserved consistently and synchronized across devices in real time. This eliminates the risk of local data loss and enhances accessibility, allowing users to manage their finances anytime and anywhere. L KJ } * ' V -fc Beyond simple record-keeping, the system emphasizes long-term financial planning. Users are able to define personal financial goals, such as saving a fixed monthly amount, reducing unnecessary expenditures, or accumulating funds for specific milestones like education, travel, or investments. The application monitors progress toward these goals, offering visual indicators and measurable metrics that reinforce accountability and encourage disciplined budgeting. By integrating budgeting tools and goal-tracking mechanisms, the platform transforms financial management into a continuous, intentional practice rather than a sporadic task. The overall aim of this project is to cultivate sustained financial literacy and responsible money habits. Ultimately, Mastering Personal Finance, Recording and Goal-Oriented Budgeting promotes financial awareness, supports proactive financial planning, and empowers users to achieve meaningful personal financial objectives

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120970 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-ENABLED MULTI-SENSOR GAIT MONITORING AND DIAGNOSTIC SYSTEM

(51) International classification	:A61B 5/11, G06N 3/08, A61B 5/00, G06N 3/04, A61B 5/103
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr Renuka Sagar
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4)Dr Aradhana D
5)Dr Jagadish RM
6)Dr Mallikarjuna A

(57) Abstract :
The present invention relates to an Al-powered gait analysis system configured for real-time monitoring, abnormality detection, and health diagnostics using a multi-sensor architecture. The system integrates one or more wearable sensors (001), including inertial measurement units, to capture motion and acceleration data during walking, and one or more vision-based sensors (002) to acquire synchronized visual and depth information. A data acquisition module (003) fuses and time-aligns the multimodal inputs into a unified gait dataset. A deep learning engine (004) comprising convolutional neural networks (005) and long short-term memory networks (006) processes the dataset to extract spatio-temporal features, determine gait phases, and detect abnormalities. An edge Al processor (007) executes trained inference models locally, enabling real-time diagnostic feedback without dependence on cloud computing. A communication interface (008) transmits diagnostic results, alerts, and gait metrics to external devices or electronic health record systems, supporting continuous monitoring, clinical assessment, and personalized gait evaluation.NTELLIGENC

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541120971 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HELP-X:WHERE HELP MEETS EACH OTHER

(51) International classification	:G06F 9/54, G06F 21/31, H04L 29/06, G06F 11/36, G06F 9/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Kisholkanth S
3)Mukesh Kumar A
4)Muralidharan B
(72)**Name of Inventor :**
1)JANNATHUL FIRTHOUS.I.A
2)Kisholkanth S
3)Mukesh Kumar A
4)Muralidharan B

(57) Abstract :
ABSTRACT HELP-X is a streamlined user-assistance and task-management platform built to organize personal workflows efficiently. It enables secure user registration, login, and personalized access to store, update, and manage skills or task-related information. Powered by FastAPI and PostgreSQL, the system ensures high performance, structured data handling, and clean API communication. JWT-based authentication protects user data, while Swagger UT provides an interactive interface for testing endpoints and monitoring backend behavior. The platform's modular architecture featuring dedicated modules for authentication, models, and CRUD operations makes it easy to extend, maintain, and debug. Overall, HELP-X delivers a simple yet scalable backend foundation suitable for productivity applications, academic projects, and future upgrades such as Al-powered automation or intelligent task recommendations.w

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120976 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT BASED NON-DESTRUCTIVE FRUIT QUALITY MONITORING SYSTEM POWERED BY SOLAR ENERGY

(51) International classification	:G01N 33/02, G06Q 50/02, G01N 21/35, H02J 7/35, G06Q 10/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)V.RAVICHANDRAN
2)V.YOGESH
3)G.RAGAV

(57) Abstract :
ABSTRACT OF THE INVENTION The development of an loT-Based Non-Destructive Fruit Quality Monitoring System Powered by Solar Energy addresses the growing need for accurate, efficient, and sustainable fruit quality assessment in modern agriculture. Traditional quality evaluation techniques often rely on manual inspection or destructive testing methods that damage the produce, increase wastage, and provide inconsistent results. These limitations hinder large-scale monitoring and affect the profitability and reliability of fruit production and distribution. To overcome these challenges, the proposed system integrates Internet of Things (loT) technology, non-destructive sensing, and solar power to create a smart and eco-friendly monitoring platform. The system utilizes a combination of optical, infrared, and gas sensors to measure essential fruit quality parameters such as colour, firmness, moisture, and ethylene emission levels key indicators of ripeness and freshness. The collected data is processed by a microcontroller-based unit and transmitted wirelessly via Wi-Fi, Bluetooth, or LoRa to a cloud-based platform or mobile application, allowing real-time monitoring, data visualization, and decision-making from remote locations. The integrated solar photovoltaic (PV) system with a charge controller and rechargeable battery ensures continuous operation, even in off-grid or rural areas, minimizing dependency on conventional electricity sources. The system s modular, weather-resistant, and low-maintenance design makes it suitable for use in farms, storage units, and distribution centers. This innovation provides a cost-effective, reliable, and sustainable solution for farmers and agribusinesses to enhance quality control, reduce post-harvest losses, and promote precision agriculture through data-driven and energy-efficient fruit monitoring practices

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120982 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DENTAL TOOLS STORAGE BOX WITH WARM WATER IMMERSION TRAY

(51) International classification	:A61C 19/02, A61C 19/00, A61L 2/04, A61L 2/26, A61B 50/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
Title: DENTAL TOOLS STORAGE BOX WITH WARM WATER IMMERSION TRAY 5 10 15 The titled invention discloses a dental tools storage box with warm water immersion tray designed to provide continuous sterilization and safe storage of dental instruments during surgical procedures. The system comprises a storage box (1) housing a dental tools tray (13) with dedicated holding slots, covered by a transparent,lid (2) to prevent external contamination. A water pump (9) supplies fresh water from a storage tank (5) through a heating coil (10) and water flow nozzle (11) to maintain a warm-water environment regulated by a temperature control panel (3) with display (4). A brim (14) ensures proper immersion depth for sterilization, while a drain pipe (12), waste water collecting tank (6), and drain outlet (8) support easy removal of used water. The unit allows immediate tool access beside the dentist, prevents missing instruments, and reduces time spent on separate sterilization steps. This invention offers a reliable, hygienic, and time-efficient solution for modern dental practices.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120983 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MANUAL SOLAR PANEL CLEANING DEVICE WITH QUICK ADJUSTABLE ATTACHMENT

(51) International classification	:H02S40/10, B08B1/30, B08B1/12, B08B1/14, F24S40/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
TITLE: MANUAL SOLAR PANEL CLEANING DEVICE WITH QUICK ADJUSTABLE ATTACHMENT 5 10 15 The titled invention discloses a manual solar panel cleaning device with quick adjustable attachment to clean solar panels efficiently and safely without the need for external power or direct contact by the user. The device comprises an outer frame (1) with clamping inserts (13) to securely attach to the solar panel, a length-adjustable slider (2) to accommodate various panel sizes, and a cleaning attachment integrating a water feed inlet (4), sweeping brush (3), and water-damped sponge (6). Water is evenly distributed through perforated plates (5), while the dual-action brush and sponge remove dust and provide a streak-free finish. The cleaning attachment is moved across the panel using a dual winding drum (7) and extension rope (11) whose movement is controlled by a rotary handle (9). This invention enables safe, uniform, and effective cleaning of solar panels by reducing labor and improving maintenance efficiency.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541120984 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : QUICK FIXING ROOF THERMAL INSULATION ATTACHMENT PALLET

(51) International classification	:E04D 3/362, E04D 13/16, E04D 11/00, E04D 3/36, E04D 3/365
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
Title: QUICK FIXING ROOF THERMAL INSULATION ATTACHMENT PALLET The titled invention discloses a quick fixing roof thermal insulation attachment pallet used for protecting corrugated roofing sheets from heat and moisture. The system comprises a roof fixing edge frame (1), longitudinal frame (2), and cross supporting frame (3) fixed to the roof using base fastening clamps (4). Adjustable intermediate inserts (5) are positioned on the frame network and locked using insert holding clamps (6). Fastening struts (7) in the inserts allow height adjustment, while aligning fasteners (8) secure the pallet slab (9) in place. The slab includes a thermal insulation lining (10) to prevent roof overheating and moisture accumulation. The invention offers an easily installable and detachable protection method that improves roof safety, reduces indoor heat transfer, and increases lifespan of corrugated roofs in commercial and domestic constructions.SSm@

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541120985 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTERACTIVE RETAIL ASSISTANT ROBOT

(51) International classification	:B25J 5/00, B25J 11/00, B25J 9/16, B25J 13/08, G06Q 30/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
Title: INTERACTIVE RETAIL ASSISTANT ROBOT 5 10 This invention relates to an interactive retail assistant robot, it typically includes a mobile base (1), a wheel (2), a power source (3), a navigation and localization sensors (4), a revolving light (5), a multi-directional display monitors (6), a body-mounted barcode reader (7), a microcontroller (8), a wireless communication module (9), a microphone and speaker (10), and safety sensors (11), a memory (12). This invention enhances customer experience by providing instant product information and wayfinding assistance while improving staff efficiency through automation of routine inquiries. This invention is primarily applied in retail environments to offer dynamic customer guidance, display instant product details via barcode scanning, and facilitate easy product location using its visible beacon light.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120986 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : RECHARGEABLE SMART STAND FLOATING SHOE DISPLAY WITH DYNAMIC PRICE AND SIZE TAG

(51) International classification	:H02J 7/00, G09F 9/33, A47F 7/08, H02J 7/02, H02J 50/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
Title: RECHARGEABLE SMART STAND FLOATING SHOE DISPLAY WITH DYNAMIC PRICE AND SIZE TAG 5 10 This invention relates to a rechargeable smart stand floating shoe display with dynamic price and size tag. It typically includes a magnetic levitation base unit (1). a floating magnetic carrier (2), a decorative led lighting system (3), a rechargeable power source (4), a power management circuitry (5), a dynamic digital display tag (6), a wireless communication module (7), a microcontroller unit (8), an outer enclosure (9), a physical charging port (10). This invention offers enhanced visual merchandising appeal and significantly boosts operational efficiency by providing a cable-free, eyecatching floating display with error-free, instant price and size updates. The invention is primarily applied in high-end retail stores, brand showrooms, and trade show environments for dynamically showcasing premium footwear with real-time, accurate product information.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120987 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DENTIST CAMPING CHAIR WITH COLLAPSIBLE SEATS AND SOLAR POWERED UTILITIES

(51) International classification	:A61G15/14, A61G15/00, A61C19/00, A61G5/08, A61G5/12, A47C1/00, H02S10/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
TITLE: DENTIST CAMPING CHAIR WITH COLLAPSIBLE SEATS AND SOLAR POWERED UTILITIES 5 10 15 The titled invention discloses a dentist camping chair with collapsible seats, reclining capability, and solar-powered utilities for outdoor dental care. The system is built on a movable deck (1) with all foldable components collapse compactly for efficient storage and mobility. The movable deck (1) is equipped with wheels (2) and a main handle (12) for convenient transportation and repositioning at camping sites. The chair incorporates a seating pad (7), a foldable armrest (6), a retractable knee-resting pad (3) supported by a stabilizing arm (4), and a retractable waist-supporting pad (5) with angle-adjustment to position the patient ergonomically during examinations and procedures. An oral cleaning tool (11) is mounted on the deck to carry out cleaning and procedural steps. The dental chair also includes a ceiling-suspended poles (9) with linear vertical extenders (13) to support a solar-panel roof (10). Solar panel supply power for dental instruments and support treatments in remote outdoor environmentsallow pati

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120988 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTIPLE DRILL JIG WITH ADJUSTABLE DIAMETER FOR EXTERNAL PIPES

(51) International classification	:B23B47/28, B23B45/14, B23B41/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
Title: MULTIPLE DRILL JIG WITH ADJUSTABLE DIAMETER FOR EXTERNAL PIPES 5 10 15 The titled invention discloses a multiple drill jig with an adjustable diameter designed to provide accurate and stable drilling on external pipes of varying sizes. The drill jig (1) comprises a main barrel structure containing a drill guide (2) fitted with hardened sleeves (3) to protect the guide openings during drilling. End inserts (4) are provided at both sides of the barrel to position the tool on different pipe diameters. The adjustable aperture system includes an aperture hub (5), an outer rotating ring (6), an inner stationary ring (7), iris plates (8). and an iris hub (9), working together to expand or reduce the opening uniformly around the pipe. An end flange (10) encloses the aperture assembly, while the bore adjuster knob (11) allows the user to set and lock the required pipe size. The invention ensures firm gripping, prevents drill bit slippage, and offers a compact and durable solution suitable for metal, plastic, and other pipe materials.ift

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541120989 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MOBILE TROLLEY FOR CONTROLLED TILTING OF BUBBLE TOP WATER CANS

(51) International classification	:B62B1/14, B62B1/16, B62B3/08, B62B5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
Title: MOBILE TROLLEY FOR CONTROLLED TILTING OF BUBBLE TOP WATER 5 CANS 10 15 The titled invention discloses a mobile trolley for the controlled tilting of heavy bubble top water cans. The trolley comprises a wheeled frame with a bottom deck (2) Jor storing a spare water can (10) and a top deck (3) supporting a novel tilting mechanism. The mechanism includes a dual arm (5) fixed to the top deck (3), a fulcrum (6) mounted between the arms, and a tiltable arm engaged with the fulcrum. A radial clamp, attached to the tiltable arm, securely cradles a primary water can. A detachable neck handle (9) is affixed to the can's neck. To pour water, a user pulls the neck handle (9), causing the can to pivot smoothly about the fulcrum (6), enabling effortless, lever-assisted pouring without lifting. A large handle (8) provides mobility, and a water glass holder offers convenient storageoppin

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541120990 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TEA GLASS HOT TUB IMMERSAL CLEANING DEVICE

(51) International classification	:A47L15/00, A47L15/02, A47L15/28, A47L15/33, B08B3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
TITLE: TEA GLASS HOT TUB IMMERSAL CLEANING DEVICE 5 10 The titled invention discloses a tea glass hot tub immersal cleaning device to safely and efficiently immerse and wash multiple glasses using hot water. The system consists of a hot tub (2) equipped with an induction heater (6), a perforated lifting tray (3) for holding the glasses, and a floating glass pusher pad (8) that ensures complete immersion during cleaning. A spring pad (7) positioned at the bottom of the tub absorbs impact, protects the glasses from breakage, and supports upward lifting. The enclosure cabin (1) collects residual tea dust, while an external temperature control panel (10) allows precise water-temperature adjustment. A drain outlet (11) enables easy removal of dirty water, making the overall cleaning process more efficient, safer, faster, and more convenient for the user.

No. of Pages : 15 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120991 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DUAL FUNCTION DENTIST ORAL SYRINGE FOR WATER BLOWING AND FLUID EVACUATION

(51) International classification	:A61C 17/02, A61C 17/06, A61C 17/028, A61C 17/08, A61M 3/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
ABSTRACT TITLE: DUAL FUNCTION DENTIST ORAL SYRINGE FOR WATER BLOWING AND FLUID EVACUATION 10 The titled invention discloses a dual function dentist oral syringe for water blowing and fluid evacuation. The device includes a cabin(l) housing a water storage tank(3), waste collecting liquid tank (8), water pump (4), vacuum pump (6), and control panel(2), which together supply pressurized irrigation water and negative-pressure suction to a dual oral syringe(10). The syringe knobs(11,12), a push barrel (15), (16), fixed barrel (19), and spring(20) mechanism switching between water blowing and fluid evacuation. A dedicated water line hose (5) and vacuum hose (9) deliver controlled pressure and suction directly to the syringe tip, ensuring efficient debris removal, cooling, and .moisture control during dental procedures. The integrated design improves workflow, enhances portability, reduces equipment handling, and provides consistent, reliable irrigation and suction performance within a single handheld instrument. incorporates slider that enable mode selector rubber ring smooth, sealed 5 15

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120995 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART THERMAL EFFICIENT BATTERY CHARGER FOR DRILLING MACHINE MOTORIZED LASER BEAM LANE GUIDANCE SYSTEM FOR NOVICE DRIVERS

(51) International classification	:H02J 7/00, H02J 7/04, H02J 7/02, H01M 10/44, H02J 7/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.P Jamuna
2)A Thanapalan
3)T Kathirvel
4)P Hariprasath

(57) Abstract :
ABSTRACT OF THE INVENTION The Smart Thermal-Efficient Battery Charger for Drilling Machines is developed to enhance the charging quality and safety of rechargeable batteries used in portable drilling tools. Drilling machine batteries undergo heavy load conditions, and improper charging causes overheating, capacity loss, and reduced lifespan. To overcome these issues, the proposed system uses an SCR-based controlled rectifier that intelligently adjusts the charging current depending on the battery's voltage and temperature behaviour. This controlled charging significantly minimises heat generation, prevents thermal damage, and ensures that the battery receives only the required amount of power throughout the charging cycle. The system is specifically tailored to the operational demands of drilling machine batteries, ensuring stable performance even after repeated heavy-duty use. The innovation incorporates an automatic cut-off mechanism and a dual-LED indicator system to provide a user-friendly and safe charging process. When the battery reaches full charge, the SCR automatically stops conduction, preventing overcharging, reducing unnecessary energy consumption, and greatly improving battery longevity. The Red/Green indicator LEDs clearly display the battery's charging state, making the system suitable for both workshop and field environments. Designed with a focus on thermal efficiency, reliability, and costeffectiveness, this charger provides a superior alternative to conventional chargers by extending the operational life of drilling machine batteries and ensuring optimal performance in domestic and industrial drilling applications.

No. of Pages : 5 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120996 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FAULT DETECTION AND ISOLATION OF FAULT CELL USING LED AS AN INDICATOR FOR BATTERY PACK IN EVS

(51) International classification	:B60L3/00, B60L3/04, B60L58/10, H01M10/42, G08B21/18, G08B5/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)N PRITTHIKA
3)A NIKESH
4)V ELANGOVAN

(57) Abstract :
ABSTRACT OF THE INVENTION Battery packs, which are composed of multiple single battery ceils connected together, power electric cars. The performance and safety of the entire battery may be compromised if even one of these cells weakens or is damaged. It can be challenging to identify the precise malfunctioning cell, and neglecting it can result in more serious issues or even vehicle failure. This project presents a system that can quickly identify and separate the problematic cell. It keeps track of each cell's health continuously and makes it obvious which one is malfunctioning, making it simple for anyone to locate and fix the problem. The battery keeps working normally even after the defective cell has been isolated, avoiding additional damage and guaranteeing seamless operation. The system is easy to use, reasonably priced, and appropriate for e-bikes and small electric cars. It prolongs battery life, lowers maintenance costs, and enhances overall safety by safeguarding healthy cells. The system clearly displays the issue, so users don't need any technical knowledge to understand it. This project promotes safer, more dependable, and more effective electric vehicle operation by offering a clever and workable solution to a common battery problem. Students, researchers, and regular EV users can all benefit from this innovation, which contributes to the development of safer and more intelligent electric vehicles in the future.cha

No. of Pages : 5 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120997 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT BASED DC-DC CONVERTER TO IMPROVE EFFICIENCY AT REMOTELY LOCATED SOLAR PANEL

(51) International classification	:H02S50/00, H02M3/00, G05F1/67, G16Y10/35, G16Y40/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
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(62) Divisional to Application Number	:NA
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2)T SALMA
3)R SUGANTH
4)G MONISHA

(57) Abstract :
ABSTRACT OF THE E^VENTION CD ��) re 0. CD CM E o . O o o CM in CM o cs CM CO in CM An loT-enabled DC-DC converter system designed to improve the operational-efficiency of remotely located solar photovoltaic (PV) panels is the focus of the present invention, which relates to the fields of renewable energy and power electronics. Installations of solar energy systems in remote or hilly areas frequently experience significant efficiency losses due to reduced power generation, poor maintenance, and difficulty in manual monitoring. The proposed invention combines Internet of Things (loT) technology with a smart DC-DC converter that regulates voltage and current in real time to ensure that the solar panel operates at its maximum power point. The system includes sensors for voltage, current, temperature, and irradiance measurement, all interfaced with a microcontroller-based converter circuit. The converter can employ buck, boost, or buck-boost topology, depending on the requirements of the system. Maximum Power Point Tracking (MPPT) algorithms like Perturb and Observe or Incremental Conductance are utilized by the microcontroller, which can be an Arduino, ESP32, or Raspberry Pi. These algorithms are used to control the duty cycle of the converter. A cloud-based platform or web dashboard receives real-time data from an loT communication module like Wi-Fi, GSM, or LoRa, allowing users to remotely monitor voltage, current, and temperature. The cloud interface can carry out automated corrective actions based on data feedback and offers visualization, analytics, and alerts for abnormal conditions. Under varying loads and irradiances, this closed-loop operation ensures dynamic optimization of solar output. Additionally, the system can instantly notify users via a mobile or web interface of faults such as panel shading, open circuits, or overheating. The invention increases system reliability and extends solar panel lifespan by reducing the need for manual inspection. Advanced filtering ensures a stable DC output while the converter makes use of high-efficiency MOSFET switches with optimized PWM control to minimize energy loss. The scalable and modular design makes it simple to integrate multiple panels into distributed networks. Cloud storage of operational data enables long-term performance analysis and predictive maintenance, while remote firmware updates ensure adaptability. In areas with limited internet connectivity, long-range low-power communication (LoRa) ensures reliable operation. The invention effectively combines renewable energy conversion with digital intelligence to achieve sustainable, autonomous, and efficient solar power

No. of Pages : 5 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541120999 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HEIGHT ADJUSTABLE OFFICE CONFERENCE DESK WITH TEMPORARY INSTANT CENTRAL PARTITION INSTALLER

(51) International classification	:A47B21/02, A47B9/00, A47B21/03, A47B13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
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(62) Divisional to Application Number	:NA
Filing Date	:NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
Title: HEIGHT ADJUSTABLE OFFICE CONFERENCE DESK WITH TEMPORARY INSTANT CENTRAL PARTITION INSTALLER 5 10 15 The titled invention discloses a multifunctional office desk designed to serve both as an individual workspace and an instant conference table within the same unit. The desk comprises an under chassis (1) mounted on movable wheels (2), a working platform (4), and a foot resting slab (3). The height of the working platform is controlled through a linear drive (5), lead screw (6). extension hub (7). and desk holder hub (8). A central partition (12) is integrated at the center of the desk and is operated by a central partition extender (9) to raise or lower the divider as needed. A remote panel (10) connected to a control interface (11) enables users to adjust both desk height and partition position. When the partition is raised, the users gain privacy for focused work, and when lowered, the desk transforms into an open meeting layout. The combined mechanisms provide a compact, adjustable, adaptable to multiple office requirements. and easily movable desk system Figure -1 CD ��) re Q. CD CM E

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121000 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DOMESTIC RECIPROCATING FLOUR SIEVING MACHINE

(51) International classification	:B07B 1/42, B07B 1/28, B07B 1/46, B07B 1/34, B07B 1/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
Title: DOMESTIC RECIPROCATING FLOUR SIEVING MACHINE 5 10 15 The titled invention discloses a domestic reciprocating flour sieving machine designed to provide an easy and efficient method for sieving flour in household kitchens. The machine is built within an enclosure (1) that holds the driving deck (2), supporting the motor-driven mechanism responsible for the reciprocating motion. Flour is fed through the hopper (4) onto the sieve (3), which is set into motion by the driving motor (5) through the eccentric flywheel (6), connecting shaft (7), slider block (8), and slider guide (9). The sieve connecting block (10) transfers the linear movement directly to the sieve (3) for effective filtering, A retractable tray (13) placed beneath collects the processed flour neatly. The system operates through a controlled power supply (11) and speed controller (12). making it suitable for various flour types. The invention provides a practical, compact solution for achieving uniform flour texture with minimal manual effort.
No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121001 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INDOOR CHILDRENS GAME ILLUMINATED PATHWAY CONE WITH HARMLESS CROSS BAR

(51) International classification	:A63H 33/26, A63H 33/22, F21S 9/03, F21V 33/00, A63H 33/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
Title: INDOOR CHILDREN&#xFFFD;S GAME ILLUMINATED PATHWAY CONE WITH HARMLESS CROSS BAR 5 10 The titled invention discloses an indoor children&#xFFFD;s game system formed with an illuminated pathway cone assembled on a cone pedestal (1) supported by a stand (2). Solar cells (3) positioned around the cone (4) recharges battery setup to supply power for illumination. A cross bar placing slot (5) is provided slightly below the tower light (9), containing magnetic dots (6) and power receptacles (10) to secure and energize the illuminated cross bar (7). The cross bar (7) is fitted with metal tips (8) that engage with the magnetic dots (6) for stable yet harmless placement. The tower light (9) on the cone (4) enhances pathway visibility. Together, the components create a safe illuminated running path with a harmless cross bar acting as a gentle boundary for children during indoor play.
No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121002 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DENTAL KIT STORAGE BOX WITH MOIST ABSORBING WARMER

(51) International classification	:A61C 19/02, A61C 19/00, A61C 19/06, B65D 81/26, B65D 81/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
TITLE: DENTAL KIT STORAGE BOX WITH MOIST ABSORBING WARMER 5 10 15 The titled invention discloses a dental kit storage box with moist absorbing warmer to maintain dental tools in a moisture-free, hygienic condition. The dental kit storage box (1) includes dental tool placement compartment with tool-holding cavities (3) to securely hold the dental tools (2) in place. A moisture sensor (9) detects humidity levels inside the dental kit storage box (1) and automatically activates the moist absorbing warmer system positioned beneath the dental tool placement compartment. The warmer fan (4) with heating coil (5) circulates warm air through warm air passage tube (7). The warm air is ejected through the warm air nozzles (8) placed at various points along the warm air passage tube (7). The residual moisture from the dental tools (2) is removed and the moisture carrying air is expelled through the vapour exhaust (12). The display panel (10) and control interface (11) allow the user to monitor and adjust internal humidity inside the dental kit storage box (1).  3

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202541121003 A
(19) INDIA
(22) Date of filing of Application :03/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR REAL-TIME INTRAVENOUS FLUID FLOW MONITORING AND ALERT GENERATION USING MICROCONTROLLER

(51) International classification	:A61M 5/168, A61M 5/172, A61M 5/14, A61M 5/00, A61M 5/142
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. P. DEEPALAKSHMI
3)C. LAHARI
4)P.JAHNAVI
5)V. RESHMA
6)V. KANKSHAY

(57) Abstract :
Title: SYSTEM AND METHOD FOR REAL-TIME INTRAVENOUS FLUID FLOW 5 MONITORING AND ALERT GENERATION USING MICROCONTROLLER 10 15 This invention relates to a system and method for real-time intravenous fluid flow monitoring and alert generation using a microcontroller, it typically includes an Arduino UNO Microcontroller (1), a Load Cell (2), a HX711 Load Cell Amplifier (3), an LCD Display (4), a Buzzer (5), a GSM Module (6), a Regulated Power Supply (7), a Connecting Wires and Cables (8), an IV Pole/Stand Attachment Mechanism (9), and SIM Card (10). The primary advantage is that the system significantly improves patient safety and hospital efficiency by automating IV fluid monitoring, eliminating human error, and providing instant, remote alerts before the fluid runs out. The system's applications include improving patient care and staff efficiency across healthcare settings, such as general hospital wards, intensive care units emergency rooms, and outpatient clinics, by ensuring accurate and timely administration. various (ICUs). IV fluidt

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121004 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART HIP-BELT ASSISTED ARTIFICIAL WALKING DEVICE FOR MOBILITY SUPPORT

(51) International classification	:A61H 3/00, A61H 3/04, A61H 1/02, A61F 2/64, A61F 2/68
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)A. LAWRENCE SAHAYA SUNDAR
2)Dr. K. VIJAYAKUMAR

(57) Abstract :
Title: SMART HIP-BELT ASSISTED ARTIFICIAL WALKING DEVICE FOR MOBILITY SUPPORT 5 10 This invention relates to a smart hip-belt-assisted artificial walking device for mobility support, it typically includes a Hip Belt (1), a Motorized Actuators (2), a Microcontroller (3), a Sensors (4), a Power Supply (5), a Support Straps (6), and a User Interface (7). offers superior independence and reduced physical effort by providing automatically adapting, stable, and comfortable motorized support across various terrains. The primary applications include medical rehabilitation, elderly care assistance, and prosthetic enhancement to enable independent personal mobility

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121005 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS LIGHTNING DETECTION AND PROTECTION SYSTEM FOR AGRICULTURAL SAFETY

(51) International classification	:G01W 1/16, G01R 29/08, G01W 1/10, A01K 29/00, A01M 29/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)A. LAWRENCE SAHAYA SUNDAR
2)Dr. K. VIJAYAKUMAR

(57) Abstract :
Title: AUTONOMOUS LIGHTNING DETECTION AND PROTECTION SYSTEM FOR AGRICULTURAL SAFETY 5 10 15 This invention relates to an autonomous lightning detection and protection system for agricultural safety, it typically includes an electric-field detection sensors (1), a radiofrequency (rf) lightning detectors (2), a central intelligent control unit (3), a directeddischarge emitters (4),an engineered grounding mesh network (5). a solar power system with battery backup (6), a mobile alert transmitter (7), a local alarm module (8), a protective housing and mounting structure (9) and a data logging and communication module (10). This invention prpvides enhanced agricultural safety by autonomously detecting lightning and issuing early warnings while physically redirecting strikes to prevent fatalities, livestock injury, and property damage in remote areas. The applications involve safeguarding farmers, livestock, and infrastructure in open fields, remote farms, and rural communities by providing real-time lightning prediction, instant alerts, and controlled energy dissipation.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121006 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTEGRATED FIRE-RESISTANT SAFETY COVER WITH SELF-CONTAINED BREATHING AND DIELECTRIC PROTECTION SYSTEM

(51) International classification	:A62B 7/10, A62B 18/10, A62B 18/02, A62B 18/08, A62B 23/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)A. LAWRENCE SAHAYA SUNDAR
2)Dr. K. VIJAYAKUMAR

(57) Abstract :
Title: INTEGRATED FIRE-RESISTANT SAFETY COVER WITH SELF- CONTAINED BREATHING AND DIELECTRIC PROTECTION SYSTEM 5 10 15 This invention relates to design and development of an integrated fire-resistant safety cover with self-contained breathing and dielectric protection system, it typically includes an outer layer (1), a middle layer (2), an inner layer (3), an integrated breathing module (4), a multi-stage filters (5), an exhalation valve (6), an optional oxygen supplement cartridge (7). an automatic seal mechanism (8), an embedded dielectric shield layer (9), a deploy lever (10), an optional cooling (11), and an optional smart alert integration (12). This invention provides superior, multi-hazard protection . against fire, electrical arcs, and toxic fumes in a single, comfortable, rapid-deployment system, significantly enhancing worker survivability. The primary applications are in high-risk industrial environments such as fireworks manufacturing, electrical and EV battery maintenance, chemical laboratories, and mining operations, where comprehensive protection against fire, electrical discharge, and toxic fumes is crucial

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121042 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN OF SUSTAINABLE CONTINUOUS TUBULAR PHOTO BIO REACTOR FROM RECYCLED FLUORESCENT TUBE LIGHTS FOR ALGAL CULTIVATION

(51) International classification	:C12M 1/00, C12M 1/04, C12N 1/12, A01G 33/00, C12M 1/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. R. THANGARAJ
4)AANANDHALAKSHMI R
5)P. SRI SHANKAR
6)M.GIRISH. V.N.KOUSHIK KUMAR
7)V. SAI KIRAN REDDY
8)R. PRAKASH

(57) Abstract :
TITLE: DESIGN OF SUSTAINABLE CONTINUOUS TUBULAR PHOTO BIO REACTOR FROM RECYCLED FLUORESCENT TUBE LIGHTS FOR ALGAL CULTIVATION 5 10 15 20 The titled invention discloses to a continuous tubular photo bioreactor intended for the production of algae, specifically using fluorescent tube lamps that are not working and contain mercury filaments, which, if disposed of inappropriately, could pose a risk to the environment The technology reduces e-waste by reusing old fluorescent bulbs (1) and offers an economical, sustainable, and energy-efficient way to cultivate algae. A dual capacity aquarium air pump (13) with ball spargers (14) for continuous aeration and CO2 supply. LED strips(7) for light exposure, a submersible water pump (6) for effective circulation, and a transparent PVC pipe system(2) are all included in the bioreactor. With optimal light, water flow, and temperature management, the bioreactor's continuous operation design allows for the sustained growing of algae like Chlorella species, increasing growth rates and biomass production. The system is perfect for small-scale algae growth operations, research, or the generation of biofuel because it requires little upkeep and has a cheap initial cost. This idea provides a sustainable alternative for the algae business, especially in underdeveloped nations or educational institutions, thanks to its creative recycling of fluorescent tubes, low energy consumption, and use of environmentally acceptable materials

No. of Pages : 21 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121043 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SUSTAINABLE EDIBLE WAX COATING FROM ORANGE PEEL WASTE FOR ENHANCED FOOD PRESERVATION

(51) International classification	:A23B 7/16, C09D 191/06, A23B 7/154, A23B 7/157, A23L 3/3472	(71)**Name of Applicant :** **1)KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION** Address of Applicant :KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION, ANAND NAGAR, KRISHNANKOIL, SRIVILLIPUTUR(VIA), VIRUDUNAGAR (DT), TAMIL NADU, INDIA-626126 Tamil Nadu India (72)**Name of Inventor :** **1)ARAVIND CHANDRAN** **2)M. HARIHARAN** **3)P. PHANINDRA** **4)G. NITHYASRI** **5)ISWARYA SREE. K. R** **6)T HARINI**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
Title: SUSTAINABLE EDIBLE WAX COATING FROM ORANGE PEEL WASTE FOR ENHANCED FOOD PRESERVATION 5 10 15 This invention relates to a sustainable edible wax coating from orange peel waste for enhanced food preservation, it typically includes a fruit peel waste (1), a propylene glycol (2), a vegetable glycerin (3), a lecithin (4), a water (5), a grinding (6), and a filtration medium (7). The advantages of this invention include extended shelf life, reduced food spoilage and waste, decreased reliance on synthetic coatings and plastic packaging, cost-effectiveness through waste utilization, and promotion of circular economy principles. Applications of this sustainable edible wax coating include postharvest preservation of fresh produce, extending the shelf life of fruits and vegetables in supermarkets and storage facilities, and enabling safer transport for the food export industries.
No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121044 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN OF AN ENHANCED CONTROL SWITCH FOR SAFE AND ACCESSIBLE COMMUNITY ENVIRONMENTS

(51) International classification	:H01H 9/16, H01H 9/20, H01H 9/22, H01H 9/02, H01H 3/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)D. AKSHAY
5)R. PRADEEP KRISHNAI
6)K. HARATHI

(57) Abstract :
Title: DESIGN OF AN ENHANCED CONTROL SWITCH FOR SAFE AND ACCESSIBLE COMMUNITY ENVIRONMENTS 5 10 15 This invention relates to the design of an enhanced control switch for safe and accessible community environments, it typically includes a base casing (1), an input/output wiring terminal (2), a base contact receptacle (3), an automatic insulation mechanism (4), a mechanical locking receiver (5), an actuator (6), a switch mechanism (7), a movable contacts (8), a plug-and-lock connector (9), an optional indicator element (10). The modular design ensures high user safety via automatic isolation, drastically cuts maintenance costs by allowing tool-free replacement, maximizes durability through plated contacts, and enhances accessibility for all users. The enhanced control switch is ideal for high-traffic public and community buildings such as schools, hospitals, offices, and residential complexes where high durability, universal accessibility, and safe, rapid maintenance are essential.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121045 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART MULTI-QUALITY MILK DISPENSING SYSTEM WITH TOUCHSCREEN INTERFACE, VOICE ASSISTANCE, AND DYNAMIC PRICING

(51) International classification	:A47J 31/44, G06Q 10/08, G06Q 30/02, G06F 3/041, G06F 3/0488	(71)**Name of Applicant :** **1)KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION** Address of Applicant :KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION, ANAND NAGAR, KRISHNANKOIL, SRIVILLIPUTUR(VIA), VIRUDUNAGAR (DT), TAMIL NADU, INDIA-626126 Tamil Nadu India (72)**Name of Inventor :** **1)Dr J. DENY** **2)DUVURU AJAY** **3)AMBATI SAI BALAJI** **4)Y VEKASH**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
Title: SMART MULTI-QUALITY MILK DISPENSING SYSTEM WITH TOUCHSCREEN INTERFACE, VOICE ASSISTANCE. AND DYNAMIC PRICING 10 15 This invention relates to a smart multi-quality milk dispensing system with touchscreen interface, voice assistance, and dynamic pricing, it typically includes a touch display (1), a milk outlet (2), a speaker (3), a control & wiring compartment (4), a cylinder tank (5), a cooling unit (6), a milk outlet door (7), and a back door (8). The smart multiquality milk dispensing system with a touchscreen interface, voice assistance, and dynamic pricing offers enhanced customer experience, 24/7 availability, multiple milk quality options, personalized interactions, efficient inventory management, reduced waste, and real-time revenue optimization through flexible pricing. Applications include 24/7 retail points in residential areas and supermarkets, self-service in corporate canteens/hostels/gyms, direct farm-to-consumer sales modernizing milk collection centres with quality-based inventory management. for local dairies, and pricing and automated Figure 1.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121046 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT IOT-AI SYSTEM FOR REAL-TIME DETECTION AND BLOCKCHAIN-SECURED MANAGEMENT OF INDUSTRIAL SEWAGE MIXING

(51) International classification	:C02F 1/00, G01N 33/18, C09D 191/06, C02F 1/28, G06Q 10/06	(71)**Name of Applicant :** **1)KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION** Address of Applicant :KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION, ANAND NAGAR, KRISHNANKOIL, SRIVILLIPUTUR(VIA), VIRUDUNAGAR (DT), TAMIL NADU, INDIA-626126 Tamil Nadu India (72)**Name of Inventor :** **1)K KARTHICK DEEPAN** **2)Dr. L MUTHULAKSHMI** **3)Dr. P. DEEPALAKSHMI** **4)DR. P. CHINNASAMY**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
Title: INTELLIGENT lOT-AI SYSTEM FOR REAL-TIME DETECTION AND BLOCKCHAIN-SECURED MANAGEMENT OF INDUSTRIAL SEWAGE MIXING 5 10 15 This invention relates to an intelligent loT-AI system for real-time detection and blockchain-secured management of industrial sewage mixing, it typically includes a fruit peel waste (1), a propylene glycol (2), a vegetable glycerin (3), a lecithin (4), a water (5), a grinding (6), and a filtration medium (7). The advantages of this invention include extended shelf life, reduced food spoilage and waste, decreased reliance on synthetic coatings and plastic packaging, cost-effectiveness through waste utilization, and promotion of circular economy principles. Applications of this sustainable edible wax coating include post-harvest preservation of fresh produce, extending the shelf life of fruits and vegetables in supermarkets and storage facilities, and enabling safer transport for the food export industrieso

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121049 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD AND SYSTEM FOR AI-DRIVEN ADAPTIVE LEARNING USING Q-LEARNING AND GENERATIVE AI

(51) International classification	:G06Q 50/20, G06N 20/00, G06N 3/08, G09B 7/02, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. ROHITH S
3)SESHAIAH MERIKAPUDI

(57) Abstract :
ABSTRACT OF THE INVENTION The patent disclosure covers Method and System for Al-Driven Adaptive Learning Using Q-Learning and Generative Al. The present invention discloses an Al-driven adaptive learning' system that integrates Q- Learning, a reinforcement learning algorithm, with Generative Artificial Intelligence (Generative Al) to personalize education dynamically. The system continuously evaluates learner performance, adjusts question difficulty, and provides contextual, real-time feedback generated by the Al model. A gamification layer enhances learner engagement and motivation through badges, progress indicators, and rewards linked to learning milestones. Experimental results demonstrate that the proposed system significantly improves learner retention, accuracy, and engagement compared to static e-learning systems. The invention thus offers a scalable, intelligent, and learner-centric educational platform suitable for academic and corporate learning environments.VSSm@

No. of Pages : 21 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121064 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART PAROXYSM PREDICTION DEVICE AND LIFE SAVER SYSTEM

(51) International classification	:A61B 5/00, A61B 5/0205, A61B 5/01, A61B 5/024, A61B 5/0245	(71)**Name of Applicant :** **1)DR. PRATHIBHA KIRAN** Address of Applicant :Associate Professor, Department of ECE, AMC Engineering, College, Bannerghatta Road, Bangalore, Karnataka -560083 Karnataka India **2)Dr. S Jagadeesha** **3) Bhavya J** **4)Harshitha K** **5)Bharath Kumar P N** **6)Sahil Raj**
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(86) International Application No	:NA	**3)Bhavya J**
Filing Date	:NA	**4)Harshitha K**
(87) International Publication No	: NA	**5)Bharath Kumar P N**
(61) Patent of Addition to Application Number	:NA	**6)Sahil Raj**
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
Paroxysms, which are sudden episodes of abnormal activity or symptoms, can occur unpredictably and may lead to severe health consequences if not detected in time. This project proposes the design and development of a Smart Paroxysm Prediction Device using ESP8266 and MATLAB to continuously monitor vital physiological parameters and predict abnormal conditions leading to paroxysms. The system integrates heart rate, Galvanic Skin Response (GSR), temperature, and ECG sensors with an ESP8266 microcontroller. Sensor readings are displayed on an LCD screen, transmitted wirelessly to MATLAB, and processed using a fine decision tree machine learning algorithm to determine whether the parameters indicate normal or abnormal conditions. Additionally, an SOS button and GPS module are integrated for emergency alerts and real-time location tracking. Sensor data and prediction results are also sent to the ThingSpeak IoT platform for continuous monitoring and visualization, enabling proactive healthcare interventions.
No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121069 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PORTABLE SMART DEVICE FOR DETECTION OF INVISIBLE GLASS DEBRIS

(51) International classification	:G01N 21/55, G06T 7/00, G06K 9/00, G01N 21/94, G06V 10/141
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)A. Abinaya
4)R. Abinayasri

(57) Abstract :
The portable smart device for detection of invisible glass debris is an innovative system developed to identify and locate small or transparent glass fragments that are invisible to the human eye. When glass materials break, tiny pieces scatter and pose a high risk of injury, especially in households, hospitals, and industrial environments. Traditional cleaning methods often fail to detect these minute fragments due to their transparent nature. [0016] To overcome this challenge, the proposed system uses advanced sensors, Al-based image processing, and light reflection analysis to detect the presence of small glass particles on the floor or any surface. The system captures live images through a camera module, which are then analyzed using machine learning algorithms that identify the unique reflective and refractive properties of glass. Once detected, the system immediately alerts the user through sound notifications or a mobile alert, enabling quick and safe removal. [0017] This invention significantly enhances safety, hygiene, and efficiency in areas prone to glass breakage. The project's objective is to minimize injuries, protect people, and introduce a smart solution for cleaning and maintenance operations. With its compact design and real-time response, the Minuet Glass Piece Detector can be effectively deployed in both domestic and commercial environments. [0018] Furthermore, this project highlights the potential of Al and sensor-based automation in ensuring human safety through intelligent detection systems. By integrating IoT capabilities, the device can store and transmit detection data to a connected application, allowing continuous monitoring and analysis. The system's versatility makes it suitable for applications in laboratories, restaurants, and manufacturing industries, making it a practical and innovative contribution to modem safety engineering.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121085 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT BASED AUTOMATIC PADDY STORAGE RAIN PROTECTION SYSTEM

(51) International classification	:A01F 25/16, A01M 29/16, A01F 25/14, A01G 13/10, A01G 13/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention proposes an IoT-based automated protection system designed to safeguard paddy and grain storage areas from unexpected rainfall. The system incorporates a Retractable Roof Sheet (1), Rain Detector (2)s Micro controller (3), Buzzers and Lights (4), Power Button (5), LCD Display (6), IoT Module (7), Agriculture Field (8), and Linear Actuator/Servo Motor (9). When the Rain Detector (2) senses rainfall, it sends a signal to the Micro controller (3), which immediately activates the Actuator/Motor (9) to extend the Roof Sheet (1) over the Agriculture Field (8). The Buzzers and Lights (4) provide local alerts, while the LCD Display (6) shows system status. The IoT Module (7) sends notifications to the farmer for remote monitoring. After rainfall stops, the Micro controller (3) retracts the Roof Sheet (1), ensuring natural drying. This cost- effective invention enhances crop safety through automation and real-time monitoring.

No. of Pages : 12 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121086 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AIR WAVES -SOUND -BASED OFFLINE COMMUNICATION SYSTEM

(51) International classification	:H04W 4/90, H04W 4/14, H04W 4/80, H04W 4/02, H04M 1/72433
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)K. Premkumar
3)C.Ranjith Kumar

(57) Abstract :
The Air Waves system is an innovative sound-based offline communication technology designed to transmit short alert messages without relying on the internet, mobile networks, Bluetooth, or RF modules. The system operates using acoustic beep patterns generated by a transmitter and decoded by a receiver, enabling simple communication in remote, low-network, or emergency environments. Each predefined message is assigned a unique frequency-based tone, which is produced by a microcontroller-driven buzzer and detected by a microphone sensor at the receiving end. The receiver analyzes the sound's frequency and pattern to identify the message and trigger an appropriate response. This method ensures reliable short-range (10-20 meters) communication using low-cost hardware and minimal power. Air Waves is highly useful in disaster zones, forests, tunnels, rural areas, and other network-absent locations. With its simplicity, portability, and energy efficiency, the system provides a practical and affordable solution for essential offline alert communication.

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121096 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SELF-DECOMPOSING SMART PACKAGING SYSTEM FOR ZERO- WASTE PHARMACY OPERATIONS

(51) International classification	:B65D 65/46, C08L 67/04, G06K 19/06, A61J 1/03, B65D 75/58
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Mrs. Shaik Shafiya Begum
5)Mr. N. Venkata Deepak
6)Dr. K. Teja
7)Dr. Suryadevara Vidyadhara

(57) Abstract :
TITLE: SELF-DECOMPOSING SMART PACKAGING SYSTEM FOR ZERO-WASTE PHARMACY OPERATIONS The present invention discloses a self-decomposing smart packaging system for zero-waste pharmacy operations. The system employs a biodegradable composite material comprising polylactic acid (PLA), mycelium, and nanocellulose, providing mechanical strength, moisture resistance, and rapid compostability. Packaging is formed through the injection moulding of the PLA–mycelium–nanocellulose blend and incorporates low-power organic electronic sensors printed on biodegradable cellulose films. The sensors continuously monitor temperature, humidity, and light exposure to ensure pharmaceutical stability and are powered by a micro-battery or ambient energy-harvesting elements. Each package includes a QR code linking to a cloud-based inventory platform, enabling real-time tracking, automated alerts, and analytics to reduce overstock and spoilage. After use, the packaging can be placed in soil or compost, where all components including sensors degrade within 60–90 days without generating toxic residues. The system provides pharmacies with an integrated solution for sustainable operations, maintaining medication safety while minimizing environmental impact.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121104 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : RAKSHINI - SYSTEM AND METHOD FOR PROACTIVE HARASSMENT DETECTION IN SURVEILLANCE ENVIRONMENTS USING EDGE-BASED ARTIFICIAL INTELLIGENCE

(51) International classification	:H04N 7/18, G08B 13/196, G06N 3/08, G06T 7/20, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Kotapati Bhargavi
2)Kotapati Gayathri Devi
3)Dr.Chittineni Aruna

(57) Abstract :
TITLE: RAKSHINI - SYSTEM AND METHOD FOR PROACTIVE HARASSMENT DETECTION IN SURVEILLANCE ENVIRONMENTS USING EDGE-BASED ARTIFICIAL INTELLIGENCE The present invention proposes a real-time harassment-detection and alerting system, Rakshini, as shown in figure-1 to protect women by combining traditional CCTV infrastructure with edge-AI processing. Live video streams from IP or analog cameras are analysed locally using AI models to detect gestures, aggressive movements, and suspicious behaviours. The system identifies physical harassment, unwanted touch, clothing violations, blocking behaviours, weapon threats, stalking, and predatory proximity patterns through pose, motion, and spatio-temporal analysis. Distress signals, including SOS gestures and verbal calls for help, are recognised to trigger immediate alerts even before harassment escalates. Rakshini also monitors lewd gestures, verbal abuse, group harassment, and behavioural aggression to provide early warning. Detected events are stored locally or on the cloud, while a dashboard visualises alerts and generates actionable insights for security teams. This multi-layered approach enables rapid response and significantly enhances the real-time safety of women in public and semi-public spaces.

No. of Pages : 11 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121105 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART NECKLACE WITH SENSORS FOR HEALTH MONITORING

(51) International classification	:A61B 5/00, A61B 5/01, G16H 40/67, A61B 5/024, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Saravana Kumar R M
3)Dr Ramya Mohan

(57) Abstract :
In the age of personalized healthcare and wearable technology, continuous health monitoring has become essential. This project presents a Smart Necklace embedded with health-monitoring sensors designed to track key physiological parameters in real-time. Utilizing sensors such as heart rate monitors, temperature sensors, and motion detectors, the necklace continuously collects and transmits data to a microcontroller (e.g., Arduino Nano or ESP32). The system offers real-time health tracking, alerts for abnormal readings, and potential integration with mobile apps for data visualization. Designed for ease of use and discretion, the smart necklace supports proactive healthcare, early diagnosis, and improved quality of life. It is especially beneficial for elderly users, patients with chronic conditions, and fitness-conscious individuals.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121106 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMARTENVIRONET:IOT BASED INTELLIGENT ENVIRONMENTAL MONITORING AND AUTOMATED RESPONSE SYSTEM

(51) International classification	:G05B 15/02, H04L 29/08, G05B 19/418, F24F 11/00, H04L 12/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr Ramya Mohan

(57) Abstract :
The invention, SmartEnviroNet (Smart Environmental Monitoring and Automated Response System), pertains to the fields of Internet of Things (IoT), environmental monitoring, and intelligent automation. It introduces a novel system that utilizes interconnected IoT sensors and intelligent analytics to monitor environmental parameters in real time and initiate automated corrective actions for optimized environmental management.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121107 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART SOLAR GRASS CUTTER WITH LAWN COVERAGE

(51) International classification	:A01D 34/00, G05D 1/02, H02J 7/35, A01D 101/00, A01D 34/82	(71)**Name of Applicant :** **1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES** Address of Applicant :SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES, SAVEETHA NAGAR,THANDALAM,CHENNAI,TAMILNADU,INDIA. PIN:602105 9884293869 Tamil Nadu India (72)**Name of Inventor :** **1)A. Prathap** **2)Dr. S. Naveen** **3)Dr Ramya Mohan**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:NA	
Filing Date	:NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
The increasing demand for automation in household and agricultural tools has driven the development of smart, energy-efficient solutions. This project presents the design and implementation of a Smart Solar Grass Cutter with Lawn Coverage, a system that autonomously trims grass while optimizing energy usage through solar power. The cutter is equipped with a solar panel that charges a battery to ensure environmentally sustainable operation without dependency on external electricity sources. Using sensors and a microcontroller-based system, the device can detect obstacles, avoid collisions, and intelligently navigate the lawn to ensure full coverage. It integrates GPS or boundary-mapping features to track mowed areas and improve efficiency. This smart system reduces human effort, promotes the use of renewable energy, and provides a cost-effective, low-maintenance solution for lawn management. Ideal for residential, institutional, and small-scale agricultural applications, the smart solar grass cutter represents a step toward greener and smarter automation in outdoor maintenance.

No. of Pages : 6 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121108 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WIRELESS GAMING PAD FOR SMARTPHONES

(51) International classification	:H04M 1/72412, A63F 13/24, H04W 4/80, G06F 3/01, A63F 13/2145
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)N.Varun Tejareddy
2)Rajesh A
3)Dr Ramya Mohan

(57) Abstract :
The design patent titled “Wireless Gaming Pad for Smartphones with Adaptive Control Features” showcases a sleek, ergonomic, and high-performance gaming accessory tailored for mobile gamers. The gaming pad features a compact, foldable structure with adjustable clamps to securely hold smartphones of varying sizes, ensuring broad device compatibility. Designed for seamless wireless connectivity via Bluetooth or similar protocols, it delivers low-latency input for responsive and immersive gameplay. The controller includes a full array of tactile buttons, analog joysticks, and responsive triggers, all strategically positioned for comfort and precision, along with customizable control mapping and macro functionality to suit user preferences. Built- in haptic feedback motors enhance realism during gameplay, while a dedicated power module with rechargeable battery support ensures extended play sessions. It also supports USB-C passthrough for simultaneous device charging, and LED indicators provide visual feedback for battery life, connectivity, and mode selection. A companion app enables firmware updates, personalized profiles, and compatibility settings for popular games. With a modem, portable design featuring a matte finish and textured grip, the wireless gaming pad blends style, functionality, and comfort, offering a professional-grade gaming experience for smartphone users both at home and on the go.

No. of Pages : 6 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121109 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REMOTE CONTROLLER CURTAIN SYSTEM

(51) International classification	:A47H 5/02, A47H 5/032, G05B 15/02, A47H 5/00, E06B 9/322
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Chittem Charankumar
2)Rajesh A
3)Dr Ramya Mohan

(57) Abstract :
The design patent titled “Remote Controller Curtain System” introduces a smart and user-friendly home automation solution that modernizes traditional window coverings through remote- operated convenience and intelligent control. This system empowers users to effortlessly adjust curtains using a dedicated remote controller or optional smartphone integration, enhancing indoor comfort and energy efficiency without manual effort. Discreetly built into the curtain rod or frame, the compact motorized unit smoothly operates lightweight, durable curtain fabrics, delivering silent and precise movement. Whether adjusting to personal preferences or preset routines, the system ensures ease of use with a seamless blend of modem aesthetics and practical design. Crafted from heat-resistant, breathable, and flexible materials, the curtains are well-suited for continuous operation in varying climates and room types. The mechanism is powered by a rechargeable battery or direct power supply, offering reliability and flexibility. With intuitive touch-based controls and wireless remote access, the system allows for personalized curtain positioning at the press of a button.Combining sleek design, remote-control functionality, and energy-efficient performance, the Remote Controller Curtain System presents a forward-thinking solution for tech-sawy homeowners, interior-conscious users, and those seeking an upgrade in comfort, style, and convenience.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121110 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AIR QUALITY ANALYZER FOR REAL-TIME POLLUTION MONITORING

(51) International classification	:G01N 33/00, G01N 1/22, G08B 21/12, F24F 11/00, F24F 11/52
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)V. Jahnavi
2)Dr. Irin Loretta
3)Dr Ramya Mohan

(57) Abstract :
The Air Quality Analyzer is an innovative system designed for real-time monitoring of environmental air quality. It uses integrated sensors to detect harmful pollutants such as PM2.5, PMIO, CO2, CO, NO2, SO2, and O3, along with temperature and humidity. The system continuously gathers data, analyzes air quality levels, and displays results on a user-friendly interface. IoT connectivity allows for remote monitoring through a smartphone app, enabling users to receive alerts when air quality reaches hazardous levels. Designed with portability and energy efficiency in mind, the analyzer can be deployed in homes, industries, and outdoor locations. It supports solar or battery power for uninterrupted operation in remote areas. The system promotes environmental awareness, aids in health protection, and supports data-driven decision-making by individuals and authorities. Additionally, the analyzer can log historical data for analysis and reporting purposes. Its modular structure allows for upgrades or calibration of individual sensors, making it a flexible and cost-effective solution for air pollution monitoring.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121111 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MINI HEAT SEALING MACHINE

(51) International classification	:B65B 51/10, B65B 51/14, B65D 75/58, B65B 61/18, B65B 51/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)N.Vighneshwar Reddy
2)Rajesh A
3)Dr Ramya Mohan

(57) Abstract :
The Mini Heat Sealing Machine is an innovative and interactive solution aimed at addressing the common problem of food spoilage and packaging inefficiency. Traditional sealing methods, although effective in closing bags or pouches, are often rendered ineffective due to lack of portability or ease of use in daily routines. This results in individuals leaving packets open unintentionally, leading to wasted food, reduced freshness, and negative impacts on storage quality. To overcome this challenge, the Mini Heat Sealing Machine integrates compact design with thermal sealing technology to compel the user to quickly and easily reseal packages. When activated, it not only produces a rapid and reliable heat seal but also allows for handheld mobility, typically using a small heating strip and pressure mechanism. The operation is either manual or semi-automatic, ensuring safe and consistent performance that adapts to different plastic materials. This sealing action helps preserve the contents and improves storage habits, thereby enhancing the effectiveness of home organization. The system is powered by a simple power source, often a battery or USB input, and includes components such as a nichrome wire, heat-resistant body, spring clamps, and optionally LED indicators for power status. The sealing temperature is consistent, and the pressure duration can be adjusted depending on the type of packaging material used. This project not only showcases the integration of hardware and uliliLy for real-world problem-solving but also emphasizes user convenience through creative design. By turning the mundane task of storing items into a fast and effective experience, the Mini Heat Sealing Machine encourages better household practices and promotes longer-lasting storage. It is particularly beneficial for homemakers, students, working professionals, and individuals concerned with food preservation. In addition to its practical application, the project serves as an excellent demonstration of compact electronics, applied thermodynamics, and human-centered product design.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121112 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : RIPENPRO-SMART ETHYLENE CONTROLLED RIPENING BOX

(51) International classification	:A23B 7/152, A23B 7/144, A23B 7/148, A23L 19/00, A23B 7/154
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.K.P.Indira
2)Dr.T.Sathish
3)Dr Ramya Mohan

(57) Abstract :
RipenPro - Smart Ethylene-Controlled Ripening Box is a compact, IoT-enabled device that is designed to facilitate uniform, safe, and eco-friendly ripening of climacteric fruits such as bananas, mangoes, papayas, and avocados. Unlike conventional methods that involve hazardous chemicals like calcium carbide or uncontrolled exposure to ethylene gas, RipenPro offers a scientifically controlled environment in which the key parameters - ethylene concentration, humidity, temperature, and airflow - are precisely supervised and regulated. This incorporates a microcontroller-based unit interfaced with gas sensors (for ethylene), temperature and humidity sensors, a controlled ethylene release mechanism, and ventilation fans to ensure homogenous ripening. An user friendly digital interface and mobile application allow for real-time tracking, customization of ripening cycles, and alerts for completion or anomaly detection. Its modular compact design is supporting different batch sizes, making it suitable for farmers, cold storage units, fruit vendors, and small-scale agro-processing industries. This ensures a minimal post-harvest loss, better colour development, enhanced taste profile, and extended life of produce. With the use of data-driven algorithms for cycle optimization makes RipenPro not only a tool for quality

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121113 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WELLNESS ON YOUR WRIST WITH AROMA CARE

(51) International classification	:A61M 21/02, A61M 21/00, A61B 5/00, A44C 5/00, A61B 5/0205	(71)**Name of Applicant :** **1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES** Address of Applicant :SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES, SAVEETHA NAGAR,THANDALAM,CHENNAI,TAMILNADU,INDIA. PIN:602105 9884293869 patents.sdc@saveetha.com Tamil Nadu India (72)**Name of Inventor :** **1)Dr. K.P. Indira** **2)Dr.T.Sathish** **3)Dr Ramya Mohan**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
In today's fast-paced world, to maintain mental and emotional well-being is very critical as physical health. "Wellness on Your Wrist with Aroma Care", presents a wearable device that integrates aromatherapy into a smart wristband, promoting relaxation, stress relief, and improved focus via the controlled release of essential oils. This innovative gadget a combination of sensor technology with aromatherapy principles to monitor the user's physiological signals-such as heart rate and skin temperature-and automatically release calming scents when stress indicators are identified. It is designed for portability, personalization, and user-friendly operation, the wristband allows individuals to enjoy the therapeutic benefits of essential oils on the go. This also includes app connectivity for customizing scent preferences, tracking mood patterns, and offering mindfulness suggestions. This project bridges wellness and wearable tech, creating a smart, stylish solution for enhancing mental wellness in day to day life.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121114 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART CUT OFF FOR CURIOUS KIDS(FOR TABLE FAN)

(51) International classification	:F04D 27/00, F04D 25/08, G08B 21/02, F04D 25/10, F04D 29/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.K.P.Indira
2)Dr.T.Sathish
3)Dr Ramya Mohan

(57) Abstract :
Table fans are common appliances in households and child-care environments that pose serious safety risks to young children due to their rotating blades and accessible structure. Curious and prying children often approach these fans out of fascination, ignorance of the potential danger. Traditional table fans are lacking in intelligent safety features to prevent accidental contact. This device introduces a smart, sensor-based safety mechanism— Smart Cutoff for Curious Kids- designed especially to address this issue. This proposed system combines proximity detection technology with an automated control unit. When a child's hand or face is detected near the blades- within a pre-defined hazardous zone-the system activates a safety response. With the help of an infrared (IR) sensor or an ultrasonic sensor, the presence of an object within a critical distance triggers a microcontroller (such as an Arduino or ESP32). The controller immediately deactivates the fan via a relay module, by cutting off power supply. Also simultaneously, an audio alert (buzzer or recorded voice message) is activated to warn the child and alert supervising adults. This intelligent safety mechanism device ensures real-time prevention of accidents, by offering a protective layer between the child and the moving fan. The system can be configured to reset automatically or require manual reactivation for more added safety. This design is cost-effective, energy-efficient, and also can be easily retrofitted to most standard table fans. With additional features such as voice alerts and optional mobile notifications, this system offers a modem, reliable solution to improve child safety in domestic and educational settings. By leveraging the basic components and simple control logic, this device demonstrates how smart technology can be used to safeguard children from everyday electrical hazards, making homes and classrooms safer for the youngest members of society.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121122 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ROPAN- A COMPREHENSIVE AI ASSISTED MENTAL HEALTH SUPPORT SYSTEM INTEGRATING REAL-TIME CRISIS INTERVENTION AND HOLISTIC WELL-BEING PLATFORM

(51) International classification	:G16H 20/70, A61B 5/16, G16H 50/30, G16H 40/67, G16H 50/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Kotapati Bhargavi
2)Kotapati Gayathri Devi
3)Dr.Chittineni Aruna
4)Koye Harshitha

(57) Abstract :
TITLE: ROPAN- A COMPREHENSIVE AI ASSISTED MENTAL HEALTH SUPPORT SYSTEM INTEGRATING REAL-TIME CRISIS INTERVENTION AND HOLISTIC WELL-BEING PLATFORM An AI-driven mental health support system has been proposed in the present invention to provide real-time, continuous, and holistic care. Users interact via web or mobile interfaces through text, voice, mood check-ins, and journaling, which are analyzed by transformer-based NLP models and a Large Language Model (LLM) to assess emotional state, behavioural patterns, and suicide risk. The platform integrates personalized interventions, including CBT/DBT micro-exercises, mindfulness, yoga, pranayama, and peer support, alongside scheduling access to therapists or wellness coaches. Multi-source biofeedback from wearables and user inputs informs dynamic mood scoring and early-warning detection. In high-risk scenarios, the system triggers multi-tiered crisis protocols, notifying emergency contacts and certified professionals. ROPAN also offers multilingual support, secure multi-channel communication, adaptive therapy paths, and continuous learning while maintaining stringent data privacy in compliance with GDPR, HIPAA, and India's DPDP Act. By combining AI, traditional wellness practices, and professional oversight, ROPAN provides proactive mental health monitoring, crisis prevention, and long-term emotional support.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121128 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TELUGU NETA- TECHNICAL ARCHITECTURE AND OPERATIONAL METHODOLOGY OF A CITIZEN GOVERNANCE INTERACTION SYSTEM WITH FEEDBACK MECHANISM

(51) International classification	:G06Q 50/26, G06F 17/30, G06Q 10/06, G06Q 50/00, G06F 3/0484
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Kotapati Bhargavi
2)Kotapati Gayathri Devi
3)Dr.Chittineni Aruna
4)Koye Harshitha
5)Rohith Kilaparthi

(57) Abstract :
TITLE: TELUGU NETA- TECHNICAL ARCHITECTURE AND OPERATIONAL METHODOLOGY OF A CITIZEN GOVERNANCE INTERACTION SYSTEM WITH FEEDBACK MECHANISM The citizen governance interaction system is a robust platform proposed to streamline communication and interaction between citizens and political leaders, enhancing governance through transparency, real-time feedback, and accountability. The system allows citizens to submit grievances in multiple formats (text, image, video, voice) and receive timely updates on their status. It features a personalized interface tailored to user preferences, location, and past interactions, while a backend service processes and routes grievances to the appropriate authorities based on geospatial data. Real-time notifications keep citizens informed at each stage of the grievance resolution, and a feedback module captures citizen ratings to assess resolution effectiveness. With multi-factor authentication and encrypted data transmission, the system ensures high security. Built on a scalable microservices architecture, it supports high engagement levels and future AI integration for sentiment analysis and predictive analytics, improving governance decision-making and fostering democratic accountability.

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121175 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT BASED ROBOTIC SURVEILLANCE ON MILITARY BORDER SECURITY

(51) International classification	:G08B 13/196, H04N 7/18, G08B 13/16, G08B 15/00, G08B 13/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)M.MANJULA
2)M. DHINESHWARAN
3)V.S. SUVETHA
4)S. DHARSHINI
5)S. ELAVARASAN
6)S. GOKUL

(57) Abstract :
The proposed system utilizes the "Internet of Things" to provide a safe and secure robotic surveillance system for military border security purposes. It is composed of "ESP32 Camera, Ultrasonic Sensor, DC Gear Motor, Wheels, L298 Motor Driver, LCD", and so on. Here, the ESP32 Camera acts as the heart of the system, which is a combination of both controller and camera setup. ESP32-S Chip is a CPU for the entire operation, and it can be programmed with the help of a programming language. On the other hand, the ultrasonic sensor captures the occurrence of intrusion in the surrounding border areas, and the sensed data can be quickly shared with the end user. Real-time data can be controlled and monitored using the Blynk IoT application, which utilizes the IoT Cloud Server for assistance.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121176 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PNEUMTIC BOARD CLEANER

(51) International classification	:B65B63/02, B30B9/00, B30B15/06, B30B15/16, F15B15/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)S. BALAKRISHNAN
2)G. NANTHA BALAN
3)S. SAKTHI
4)N. SIVA PRAKASH

(57) Abstract :
Classroom teaching often requires frequent board cleaning, and traditional erasers demand repetitive manual effort, resulting in fatigue, inconsistent cleaning, and significant chalk dust dispersion. These issues can reduce teaching efficiency and affect classroom air quality, causing discomfort for both teachers and students. To address this, the Pneumatic Board Cleaner System has been developed as an automated solution that ensures uniform, dust-controlled wiping of blackboards using compressed air-driven actuation. The system employs a double-acting pneumatic cylinder, a directional control valve, and a guided wiper mechanism mounted on a lightweight frame. When activated, compressed air drives the wiper smoothly across the board surface, providing consistent cleaning with minimal human input. Flow control valves enable adjustable speed, while the mechanism's simple structure ensures reliability, low energy consumption, and ease of maintenance. Designed to be cost-effective and classroom-friendly, the device avoids electrical hazards and is suitable for institutions that already use compressed air systems. Optional features such as a foot pedal, push-button control, or dustcollecting attachments can further enhance usability. Testing shows significant reduction in cleaning time, improved surface clarity, and notable decrease in airborne chalk particles. Overall, this pneumatic board-cleaning system offers a practical and efficient solution that simplifies the teaching process, promotes a cleaner environment, and provides a durable alternative to manual erasing.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121177 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PULSATION REDUCTION IN DYNAMIC WIRELESS CHARGING OF ELECTRIC VEHICLES USING LCC COMPENSATION WITH PREDICTIVE AND FAST SECONDARY CONTROL

(51) International classification	:B60L53/12, B60L53/122, H02J50/12, H02J50/70, H02M1/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)A. THIRUMALAI VEL GANESH
7)V . GURUPRASAD

(57) Abstract :
The present invention relates to a dynamic wireless charging system for electric vehicles, with the ability to provide stable and efficient power transfer while the vehicle is in motion. Conventional dynamic wireless power systems often produce power pulsations due to the fluctuation in magnetic coupling between transmitter and receiver coils when a vehicle crosses multiple charging segments. These fluctuations result in unstable output power, decreased efficiency, and degradation of the vehicle's battery. The present invention overcomes these drawbacks and, accordingly, provides a new hybrid compensation and control technique that combines an LCC compensation network with an intelligent predictive control system and a fast-response secondary controller. This LCC compensating network, in turn comprising a series inductor (L_s), series capacitor (C_s), and parallel capacitor (C_p), is tuned for resonance so that the transmitter acts as a constant current source. This setup minimizes the impact of coil misalignment and ensures consistent power transmission. The predictive control unit observes the vehicle's position and coupling variation to predict coil transitions so as to set the inverter parameters in advance and avoid instant voltage or current spikes. Meanwhile, the fast secondary controller at the receiver's DC-DC converter acts instantaneously on small perturbations, smoothing residual output ripples and maintaining a constant DC supply for the EV battery. Simulation and experimental results confirm that the proposed method reduces power pulsation from approximately 10-12% to below 3%, representing a significant improvement in system stability and energy efficiency. The invention offers a compact, scalable, and reliable solution for both stationary and dynamic EV charging, enhancing the safety and efficiency of wireless power delivery in contemporary electric transportation systems.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121178 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DEVICE FOR THE IMPLEMENTATION ELECTRONIC HEALTH RECORD MAINTENANCE FOR PATIENTS

(51) International classification	:G16H 10/60, G16H 40/67, G06F 7373714707 21/62, G16H 40/20, G06F 21/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. K. Laiitha
2)Dr. T. M. Alamelu Manghai
3) G.D Divith
4)A. Vishnu

(57) Abstract :
The present invention provides a portable electronic device and method for the secure, patient-centric consolidation and management of electronic health records (EHRs). The device solves the critical problem of health data fragmentation by aggregating a patient's complete medical history from multiple, disparate healthcare institutions into a single, tamper-resistant unit. It comprises a secure data storage module, a hardware-backed security module for encryption and granular access control, and multiple communication interfaces for both online and offline data transfer. Uniquely, the device integrates an on-board artificial intelligence (Al) engine that analyzes consolidated records to generate proactive alerts for drug interactions and allergies, and a natural language interface for instant querying of medical information. This invention ensures immediate access to vital health data in emergencies, eliminates redundant medical tests, and empowers patients with full control over their personal health information, thereby enabling safer, more efficient, and interoperable healthcare.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121179 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT BASED SMART ID CARD SYSTEM FOR REAL-TIME TRACKING

(51) International classification	:G06Q 50/20, H04L 29/08, G06K 19/07, H04W 4/029, H04W 4/80
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)S. Mohan Gandhi
2)Sathyanarayanan.R
3)Rahul Kumar.L
4)Rohith.S

(57) Abstract :
ABSTRACT OF THE INVENTION 03-Dec-2025/125513/202541121179/Form 2(Title Page) The invention titled “IoT-Based Smart ID Card System for Real-Time Student Tracking” presents an advanced and reliable solution designed to improve student safety, automate school operations, and enhance communication between parents and educational institutions. As schools grow in size and student mobility increases, maintaining continuous awareness of student location has become essential for ensuring safety during campus activities and daily transportation. The proposed system integrates a compact GPS and IoT-enabled module into a Smart ID Card worn by each student. This module continuously captures the student's real-time location and transmits the data to a secure cloud server using Wi-Fi or GSM connectivity. The cloud platform processes incoming data streams, compares them with predefined safe zones, classroom boundaries, and bus route information, and provides instant updates to authorized users through a mobile and web-based interface. To further enhance safety and operational efficiency, the system incorporates Al-driven analytics capable of identifying unusual movement patterns, unauthorized zone exits, unexpected delays during commutes, and potential safety risks. These intelligent insights enable timely notifications to parents, teachers, and administrators, ensuring that appropriate actions can be taken without delay. The invention also supports automated attendance recording, eliminating the need for manual roll calls by marking attendance based on geolocation and proximity detection. The platform additionally offers a complete history of student travel routes, arrival and departure times, and campus activity logs, giving parents peace of mind and assisting schools in maintaining accurate records. Strong data security and privacy protection are maintained through AES-256 encryption, rolebased access control, and compliance with established child data protection standards. This ensures that sensitive student information remains confidential and accessible only to authorized individuals. Overall, the invention delivers a scalable, cost-effective, and future-ready smart campus solution that enhances student safety, streamlines school management, and supports efficient transportation monitoring. By combining IoT hardware, cloud analytics, Al-based intelligence, and secure communication, the IoT-Based Smart ID Card System establishes a robust foundation for next-generation educational safety and monitoring systems.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025

(21) Application No.202541121188 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE TIMER BASED SMART CHARGING ADAPTOR

(51) International classification	:H02J7/00, H02J7/64, H02J7/62, H02J7/65, H02J105/54, H02J7/82
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S.NIVAS
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3)K.NIVETHA

(57) Abstract :
Electronic devices increasingly rely on frequent charging, resulting in risks such as overcharging,Overheating, battery degradation, and unnecessary energy consumption. Overcharging electronic gadgets can lead to several significant drawbacks that reduce the performance, lifespan, and safety of the device. A portable timer-based smart charging adaptor for controlling the duration of power delivery to electronic devices is disclosed. The adaptor comprises a microcontroller, timer selection interface, solid-state switching circuit, sensing modules, display, and safety protection circuits. It allows the user to pre-set the charging duration and automatically disconnects power after the set time or upon detection of full charge or unsafe conditions. The invention enhances battery life, prevents overheating, and provides energy-efficient, portable, and user-friendly charging control.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2025
(21) Application No.202541121270 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTIFUNCTIONAL PROPERTIES OF LIGHT WEIGHT POLYPROPYLENE DUAL NANO-HYBRID COMPOSITES SYSTEM AFTER NOVEL STEP WISE HYDROTHERMAL AGING

(51) International classification	:C08K 3/04, C08K 3/34, C08K 3/22, C08J 3/20, C08K 7/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)NANOTH, Rasana
2)LEENA, Snaha
3)KARINGAMANNA, Jayanarayanan

(57) Abstract :
The present disclosure relates to a hybrid nanocomposite comprises: 98 to 99 % w/w of a polymer matrix; 0.5 to 1 % w/w of a metal carbide nanofiller; and 0.5 to 1 % w/w of a carbon-based nanofiller. The present disclosure also relates to a method of preparation of a hybrid nanocomposite by mixing 98 to 99 % w/w of a polymer matrix with 0.5 to 1 % w/w of a metal carbide nanofiller and 0.5 to 1 % w/w of a carbon-based nanofiller to obtain a homogeneously mixed blend which is processed by extrusion to obtain an extrudate strands. The extrudate strands are pelletized to obtain a composite pellets and molding the composite pellets by injection molding to form a hybrid nanocomposite. The hybrid nanocomposite of the present disclosure shows superlative mechanical and viscoelastic properties. The hybrid nanocomposite of the present disclosure incorporates ceramic-based tungsten carbide and carbon-based graphene nanofillers within the polypropylene matrix, which induces an annealing effect after hydrothermal aging promoting the formation of new crystals. The unique synergism and mechanism retain the multifunctional properties of light weight PP composite system even after aging, distinguishing the hybrid system described herein.

No. of Pages : 42 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121462 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NEXT-GEN LAPAROSCOPIC PROBE WITH UNIFIED BIOPSY AND REAL-TIME HISTOLOGICAL ANALYSIS MODULE

(51) International classification	:A61B 10/02, A61B 10/04, A61B 10/00, A61B 17/34, A61B 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.M. Ramamoorthy
2)Dr.K. Nattar Kannan
3)Dr Ramya Mohan

(57) Abstract :
he invention relates to a multifunctional laparoscopic probe designed to perform both tissue biopsy and real-time histological analysis during minimally invasive surgical procedures. This integrated device streamlines diagnostic workflows by eliminating the delay associated with sending samples to external labs. The system incorporates a biopsy needle, micro-imaging sensors, and a compact in-situ analysis unit, thereby enhancing surgical precision, reducing procedure time, and improving patient outcomes. Designed for compatibility with standard laparoscopic ports, the invention features an ergonomic, sterilizable design and supports Al-assisted diagnostics, wireless connectivity, and modular cartridge replacements for different imaging techniques or tissue types. This intelligent probe addresses the long-standing clinical challenge of delayed intraoperative tissue diagnostics, offering a cost-effective, efficient, and scalable solution suitable for both advanced surgical centers and resource-limited environments

No. of Pages : 6 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121463 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART EAR BUDS WITH TF CARD

(51) International classification	:H04R 1/10, H04R 5/033, H04W 4/80, G06F 3/16, H04R 3/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)S. Venkateswarlu Reddy
2)Rajesh A
3)Dr Ramya Mohan

(57) Abstract :
The present design patent discloses smart earbuds with an integrated TF (microSD) card slot, combining wireless audio functionality with onboard storage for standalone music playback. The earbuds feature a sleek, ergonomic design optimized for comfort and secure fit, with touch controls for playback, volume adjustment, and call handling. The integration of a TF card slot allows users to store and play music directly from the earbuds without requiring a connected device, enhancing portability and convenience. The design incorporates a compact yet durable housing that accommodates the card slot without compromising aesthetics or comfort. Additionally, the earbuds support Bluetooth connectivity, enabling seamless switching between stored audio and streaming services. LED indicators provide status updates, and an intuitive charging case complements the design for extended battery life. This innovative design caters to users seeking a wireless, self-sufficient audio experience, making it ideal for sports, travel, and outdoor activities without dependence on smartphones or other devices.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121464 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATIC CUP WASHER

(51) International classification	:A47L 15/42, A47L 15/00, A47L 15/23, A47L 15/16, B08B 9/093
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)C.Vivek
2)Rajesh A
3)Dr Ramya Mohan

(57) Abstract :
The design patent titled “AUTOMATIC CUP WASHER” introduces a compact, efficient, and user-friendly device designed to automate the cleaning of cups and similar utensils. This appliance features strategically positioned high-pressure waterjets and a rotating cleaning mechanism that ensures thorough washing with minimal human effort. Engineered for homes, offices, cafes, and small food establishments, it reduces time and manual labor while ensuring hygienic results. Combining robust cleaning performance with an ergonomic, space-saving design, the Automatic Cup Washer provides a smart, convenient, and water-efficient solution to everyday washing needs.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121465 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI/ML-ENABLED ENHANCING DRIVER SAFETY WITH SLEEP DETECTION USING IR SENSOR/CAMERA TRACKING

(51) International classification	:G08B 21/06, B60W 40/08, B60W 50/14, A61B 5/11, A61B 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)B Sai Charan
2)Dr. Saravana Kumar R M
3)Dr Ramya Mohan

(57) Abstract :
With the increasing concern over road safety and fatigue-related accidents, monitoring driver alertness has become a critical aspect of automotive technology. This project presents an AI/ML-enabled driver safety system that detects drowsiness or sleep using infrared (IR) sensors or camera tracking. By analyzing facial features, eye movements, and blinking patterns, the system identifies signs of fatigue and triggers alerts in real-time. The system integrates an IR sensor or camera module with a microcontroller (such as Arduino or Raspberry Pi) and utilizes machine learning algorithms to detect early signs of sleep. It is designed to prevent accidents by warning the driver before a critical loss of alertness occurs. Ideal for smart vehicles, logistics fleets, and public transportation, this solution emphasizes automation, safety, and real-time monitoring without driver input.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121466 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EFFECTIVENESS OF SOLAR-POWER CHARGING IN COMPARISON TO TRADITIONAL POWER BANKS FOR SUSTAINABLE AND O

(51) International classification	:H02J7/35, H01M10/46, F21L4/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Velamuri Tharun Sai Kumar
2)Dr. Saravana Kumar R M
3)Dr Ramya Mohan

(57) Abstract :
The present invention relates to a Solar Power Bank designed for efficient, portable energy storage and usage. Equipped with a high-capacity 30000mAh battery, this power bank integrates solar charging capabilities with conventional charging methods to ensure continuous power supply. It features a normal light (LED torch) for practical illumination and an LCD display to indicate battery status, charging progress, and output power. This combination enhances usability, transparency, and convenience for users in both outdoor and emergency situations. The solar power bank offers an eco-friendly alternative for charging electronic devices, reducing dependency on conventional electricity sources while providing real-time battery monitoring through the LCD display. This invention introduces a versatile Solar Power Bank equipped with a high-capacity 30000mAh battery, designed to provide reliable, eco-friendly power solutions for mobile devices. The device combines solar energy harvesting with conventional charging to ensure uninterrupted power availability in various environments, especially during outdoor activities and emergencies. Integrated within the power bank is a bright LED light for illumination and a clear LCD display that delivers real-time battery information, including charge level, input/output status, and power consumption. By merging renewable energy technology with user-friendly features, this power bank offers a sustainable and convenient energy source that enhances mobility and reduces dependence on traditional electrical grids.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121471 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : RUNNING ALARM CLOCK

(51) International classification	:G04G 13/02, G04B 47/00, G04B 23/02, G04B 23/00, G04G 13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)U.Vijay Kumar
2)Rajesh A
3)Dr Ramya Mohan

(57) Abstract :
The Running Alarm Clock is an innovative and interactive solution aimed at addressing the common problem of oversleeping and snoozing alarms. Traditional alarm clocks, although effective in generating sound to wake a person, are often rendered ineffective due to the ease of turning them off or using the snooze function while still half-asleep. This results in individuals going back to sleep unintentionally, leading to late starts, reduced productivity, and negative impacts on daily routines. To overcome this challenge, the Running Alarm Clock integrates mobility with auditory alert systems to physically compel the user to get out of bed in order to switch it off When the alarm activates at the pre-set time, it not only produces a loud and persistent sound but also begins to move away from the user's reach, typically using wheels or a small robotic platform. The movement is either random or programmed to avoid easy capture, forcing the user to chase the alarm clock across the room or space. This physical activity disrupts the user's sleep inertia and makes it less likely for them to return to bed immediately, thereby enhancing the effectiveness of the wake-up process. The system is powered by a microcontroller, often an Arduino or similar platform, and includes components such as a real-time clock (RTC) module, motor drivers, DC or servo motors, a buzzer or speaker, and optionally ultrasonic sensors to detect obstacles. The alarm time is programmable, and the mobility feature can be customized for speed and direction, depending on the environment in which the device is used. This project not only showcases the integration of hardware and software for real-world problemsolving but also emphasizes user behavior change through creative design. By turning the mundane task of waking up into a playful and engaging experience, the Running Alami Clock encourages healthier sleep habits and promotes a more active and alert start to the day. It is particularly beneficial for heavy sleepers, students, working professionals, and individuals with poor waking habits. In addition to its practical application, the project serves as an excellent demonstration of embedded systems, robotics, and human-cantered product design.

No. of Pages : 6 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121472 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE FAN WITH SOLAR

(51) International classification	:F04D 25/08, H02J 7/35, F04D 25/06, F04D 29/00, F04D 27/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)M.Venu
2)Rajesh A
3)Dr Ramya Mohan

(57) Abstract :
The Portable Solar Fan is an innovative and interactive solution designed to address common issues such as heat discomfort, inconsistent power supply, and lack of ventilation in outdoor or mobile environments. Traditional electric fans, although effective, often fail in situations where portability and access to electricity are limited. To overcome these challenges, the Portable Solar Fan integrates a compact, lightweight design with renewable solar energy technology, allowing users to enjoy consistent airflow without depending on traditional power sources. It operates using a solar panel that harnesses sunlight to drive a small, efficient motor connected to fan blades, while a rechargeable battery stores energy for use during cloudy conditions or at night. The system is typically powered by polycrystalline or monocrystalline solar panels and includes components such as a brushless DC motor, lithium-ion battery, control circuitry, lightweight fan blades, and optional features like USB charging ports and LED indicators for power or battery status. The fan may include speed control settings and an intuitive interface for ease of use, making it adaptable to various environmental conditions and user preferences. Its heat-resistant, ergonomic housing enhances mobility and comfort whether used at home, in outdoor settings, or while traveling. This device not only promotes eco-friendly, power-independent living but also demonstrates the practical application of renewable energy, electronics, and user-centered product design. By turning the simple need for ventilation into a sustainable and accessible experience, the Portable Solar Fan encourages energy awareness and offers practical benefits for students, traveller's, outdoor workers, and individuals in areas with limited electricity access.

No. of Pages : 6 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121473 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GESTURE CONTROLLED MUSIC AND HOME SYSTEM FOR SPEECH IMPAIRED USERS

(51) International classification	:G10L 15/22, G06F 3/01, G06F 3/16, G10L 15/26, G06F 3/0488
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Mahesh. A
2)Rajesh A
3)Dr Ramya Mohan

(57) Abstract :
The design titled “Gesture-Controlled Music and Home System for Speech-Impaired Users” presents an innovative assistive technology solution aimed at enhancing accessibility in smart home environments for non-verbal individuals. This system enables users to control smart assistants and home devices through intuitive hand gestures, completely eliminating the need for speech, touchscreens, or companion apps. By integrating real-time computer vision. Al-based gesture recognition, and a low-cost hardware setup— including a USB camera and processing unit— the system maps predefined gestures to common smart assistant commands such as playing music, adjusting lights, or accessing information. Designed with simplicity, affordability, and inclusivity in mind, the device empowers speech-impaired users to interact independently with their smart environment. Its plug-and-play architecture, customizable gesture library, and seamless compatibility with platforms like Amazon Alexa ensure that it tits effortlessly into diverse home settings, offering a dignified, voice-free alternative for smart technology control.

No. of Pages : 6 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121474 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE ELECTRIC STOVE FOR COOKING AND ROOM WARMING

(51) International classification	:F24C 7/08, F24C 7/06, F24C 7/04, F24C 7/00, F24C 15/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Heram H
2)Rajesh A
3)Dr Ramya Mohan

(57) Abstract :
The present design patent discloses a portable electric stove capable of both cooking and warming indoor spaces. This compact and dual-purpose appliance integrates heating coils and temperature control circuits, designed to efficiently support small-scale cooking while also acting as a space heater. With a user-friendly interface and ergonomic housing, the design ensures safety, portability, and convenience. The appliance features adjustable heat settings, an energyefficient heating element, and overheat protection. A durable, heat-resistant casing allows for safe indoor use. This innovation provides a space-saving and cost-effective solution for users in dorms, small apartments, and travel situations where traditional stoves or heaters may not be feasible.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121475 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART CEILING FAN FALL DETECTOR

(51) International classification	:G08B 21/04, F04D 27/00, G08B 21/02, F04D 25/08, G08B 25/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.K.P. INDIRA
2)Dr.T.Sathish
3)Dr Ramya Mohan

(57) Abstract :
The Smart Ceiling Fan Fall Detector is an innovative safety solution intended to determine and to give alert in real-time, when somebody experiences a fall, especially in indoor residential or elderly care environments. When integrating machine learning algorithms, motion sensors and accelerometers within the ceiling fan unit, this system continuously monitors human activity beneath the fan. The device detect and observe abnormal motion patterns that signify a fall and promptly triggers an alert via connected mobile applications or smart home systems. Unlike wearable fall detection devices, this ceiling-mounted solution device offers non-intrusive, environment-based monitoring, ensuring better compliance and user comfort. Also this system includes features like automatic fan speed regulation and temperature sensing to enhance our surrounding comfort. This device aims to improve in-home safety, especially for the children, elderly and physically vulnerable individuals, by providing a reliable and non-wearable fall detection system with smart environmental control capabilities.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121476 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD FOR FIXED POINT COMPUTATION IN ULTRAMETRIC SPACES USING P-ADIC DISTANCE

(51) International classification	:G01C 3/08, G01C 3/00, G01C 15/00, G01C 3/06, G06F 17/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Gowri Senthil
2)Dr. P. Vijayalakshmi
3)Dr. R. Mary Jeya Jothi
4)Dr. B.Amutha
5)Dr Ramya Mohan

(57) Abstract :
The proposed method presents a new approach to fixed point computation in ultrametric spaces with p-adic distance. It builds on classical results and applies them to partially ordered settings, offering practical applications in fields such as cryptography, data science, and engineering. This method guarantees both the convergence and uniqueness of fixed points, laying a strong foundation for future research and industrial applications.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121477 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TREATMENT OF PATHOGENS IN ORNAMENTAL FISH

(51) International classification	:A01N 59/16, A61P 31/04, B22F 9/24, A61K 36/185, B22F 1/054	(71)**Name of Applicant :** **1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES,** Address of Applicant :SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES, SAVEETHA NAGAR,THANDALAM,CHENNAI,TAMILNADU,INDIA. PIN:602105 9884293869 patents.sdc@saveetha.com Tamil Nadu India
(31) Priority Document No	:NA	(72)**Name of Inventor :** **1)Ashmitha Kalairaj**
(32) Priority Date	:NA	**2)Swethashree Rajendran**
(33) Name of priority country	:NA	**3)Shrinidhi Sureshbabu**
(86) International Application No	:NA	**4)T. Senthilvelan**
Filing Date	:NA	**5)Dr Ramya Mohan**
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
This research proposes the green synthesis and application of silver nanoparticles (AgNPs) using Magnifera indica (mango leaves), Musa paradisiaca (banana peel), and rock salt for the treatment of pathogenic infections in ornamental fish. The study aims to develop an eco-friendly, cost- effective antimicrobial solution leveraging phytochemical-rich agro-waste materials. Extracts from M. indica leaves and M. paradisiaca peels are combined with a rock salt solution to form the MM extract, which acts as a natural reducing and stabilizing agent in the biosynthesis of silver nanoparticles through reaction with silver nitrate (AgNCh). The resulting Silver MMS Nanoparticles will be characterized using techniques such as UV-Vis spectroscopy, FTIR, SEM, TEM, and XRD to determine their physicochemical properties. The antimicrobial efficacy of the synthesized nanoparticles will be evaluated by applying them to ornamental fish infected with common aquatic pathogens. Parameters such as wound healing, behavioral response, mortality rate, and microbial load reduction will be monitored. This study also explores the biocompatibility and safety of the nanoparticles to ensure their non-toxicity to aquatic life. The anticipated outcome is that Silver MMS Nanoparticles will exhibit significant antibacterial activity and contribute to the recovery of infected fish, offering a novel, sustainable therapeutic approach in ornamental aquaculture. This research not only utilizes biodegradable agricultural waste but also promotes a circular bioeconomy, presenting a viable alternative to conventional chemical treatments in aquatic health management.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121478 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PREPARATION OF BIO-BASED FOOD PRESERVING PACKAGING MATERIAL FROM LACCASE SYNTHESIZED TITANIUM DIOXIDE NANOPARTICLES: A GREEN FOOD PACKAGING SOLUTION

(51) International classification	:C12N 9/02, D21H 17/67, G01N 33/02, D21H 11/18, D21H 11/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Ashmitha Kalairaj
2)Swethashree Rajendran
3)Shrinidhi Sureshbabu
4)T. Senthilvelan
5)Dr Ramya Mohan

(57) Abstract :
This research proposes the development and integration of laccase-synthesized titanium dioxide nanoparticles (LacTiOx NPs) into cellulose paper for food packaging. Current study is aiming to enhance mechanical, barrier, and antimicrobial properties. White Rot fungi will be isolated, screened, and identified through 18s rRNA sequencing. Laccase production will be done by using agro-waste products like coconutoil cake, Tea waste and Saw dust by the method of submerged fermentation and optimized using Response Surface Methodology (RSM). Characterization of the enzyme and LacTiOx NPs will be performed using various analyses such as cyclic voltammetry, SDS PAGE, SEM, TEM, FTIR, XRD, AFM, and EDS. The LacTiOx NPs will be utilized to coat cellulose paper, which will subsequently undergo testing for mechanical strength, barrier properties, and antimicrobial efficacy. The study will comprehensively evaluate the coated paper's effectiveness in packaging a variety of food products, including fruits, vegetables, meat (poultry & seafood), bakery items, and chocolates. Key parameters to be assessed include morphological changes, color stability, ethylene production, nutrient and moisture content, firmness, weight, taste, appearance, respiration rate, oxygen and carbon dioxide levels, and overall shelflife. Furthermore, the mechanical properties of the coated paper, such as strength, durability, water vapor transmission rate, and oil and grease resistance, will be evaluated. Environmental and safety aspects, including biodegradability and toxicity, will also be assessed. The expected outcome of this study is that LacTiOx NP-coated cellulose paper will significantly enhance the shelflife and quality of packaged foods by providing superior mechanical strength, barrier properties, and antimicrobial activity. This innovative packaging material is anticipated to offer a sustainable and eco-friendly alternati synthetic food packaging solutions, paving the way for future optimizations and validations.

No. of Pages : 6 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121480 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GSM-ALARM SMART CARD ENERGY METER

(51) International classification	:G07F 15/06, G01R 22/06, G07F 15/00, G01R 22/00, G06Q 50/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)K. Vishnu Vardhan Reddy
2)Dr.T.Sathish
3)Dr Ramya Mohan

(57) Abstract :
The GSM-Alarm Smart Card Energy Meter is a new system that is being developed with an aim to change the electricity consumption monitoring, control and billing. This system combines the technology of smart card with GSM module of communication and a built in logic of control to automate energy metering whilst allowing greater user control and real time alerts. Their main idea is based on using prepaid energy since the user is required to load his smart card with energy tokens and plugging it into the meter. The embedded micro controller reads the card and energizes the power delivery and keeps deducting units as they are consumed. As the balance falls to the critical level an alarm is activated on the system to notify the user and a low-balance SMS is sent out through the GSM module. Where there is zero balance, the system will automatically cut off the load to unpaid consumption. There is also the Capability of the GSM module to detect remote checking,-balance inquiries, and reminders to the users and the utility providers. The innovation—avoids the manual readings of the meters, delay in billing, and offending power demand besides giving consumers the freedom to easily control their power consumption expenditure. The system is also compatible with centralized or online recharging making it easy to use and scale. This project is designed to meet residential, commercial, and industrial need to provide secure, cost-effective yet transparent energy management solution in which the utility and consumers both like the benefit. GSM-Alarm Smart Card Energy Meter is a proactive innovation in the modernisation of power grid by integrating smart automation, transmission of real-time and smart meters that are user friendly.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121481 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ECO-CLEANMIST:A FACILE & ROBUST BIO-SANITIZER

(51) International classification	:A61Q 19/10, A61K 8/34, A61K 8/97, A61K 8/365, A61K 36/185
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)M. Pooja Niharika
2)Dr. Suresh Babu Palanisamy
3)Dr Ramya Mohan

(57) Abstract :
Eco-CleanMist is an innovative, alcohol-free bio-sanitizer developed through the fermentation of agro-industrial fruit waste, harnessing lactic acid and acetic acid as natural antimicrobial agents. This study aimed to evaluate its antimicrobial efficacy, skin compatibility, and storage stability to ensure safety and effectiveness for real-world applications. Antimicrobial activity was tested against Escherichia coli, Staphylococcus aureus, and Candida albicans, showing significant zones of inhibition, thereby confirming broad-spectrum effectiveness. Skin compatibility was assessed through patch testing, which revealed no irritation, indicating its suitability for sensitive skin. Storage stability analysis demonstrated product effectiveness for over four weeks under controlled conditions. The findings highlight Eco-CleanMist as a sustainable, eco-friendly sanitizer that not only reduces fruit waste but also offers a safe and effective alternative to conventional alcohol- based sanitizers. This work establishes its potential for public hygiene applications and future large- scale commercialization

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121482 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND DEVELOPMENT OF SMART MILK VENDING MACHINE

(51) International classification	:G07F 13/06, G07F 9/10, G07F 13/10, G07F 9/02, A47J 31/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)S SIVAPRIYA
3)G PRADEEPRAJA
4)K GUHAN
5)S SANTHIYA
6)E VISWASA MICHAEL

(57) Abstract :
This work focuses on the design and development of a smart milk vending machine that provides milk in a clean, safe, and automatic manner. Traditional milk distribution often involves manual handling, long waiting time, quality issues, and difficulty in ensuring accurate quantity. To overcome these problems, this smart system stores milk in a food-grade tank and uses a cooling mechanism to maintain the required temperature and preserve freshness. The machine includes a microcontroller, level and temperature sensors, user interface, digital payment system, and a controlled dispensing unit. Users can select the required milk quantity through the display panel and make payment using digital methods for easy and cash-free usage. After payment, the microcontroller check milk level and temperature before dispensing the exact amount of milk. A pump and food-grade piping system ensure smooth and hygienic delivery into the user's container. The system automatically stops dispensing once the desired quantity is delivered, ensuring precise measurement without wastage. This automated vending machine reduces manpower, improves hygiene, saves time, and provides round-the-clock milk availability in public places such as dairy stores, hostels, flats, villages, and community centers. The invention aims to modernize milk distribution, make the process more efficient and user-friendly, and promote a clean and reliable milk supply system for consumers

No. of Pages : 5 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121483 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART ACCIDENT MONITORING AND ALERT SYSTEM USING CAMERA

(51) International classification	:H04N 7/18, G08B 21/02, G08B 25/10, G08B 25/00, G08B 25/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)A.U. Prajin Sankar
3)B. Sudharsan
4)T.Vel Murugan

(57) Abstract :
The present invention relates to the field of intelligent transportation systems (ITS), artificial intelligence (AI), and the Internet of Things (loT). More particularly, the invention pertains to a real-time accident detection and automated emergency alert system that employs AI-based video analysis in combination with embedded IoT devices to monitor traffic and identify accidents automatically. The system is designed to analyze live video streams from roadside or vehicle-mounted cameras, detect collision events or abnormal motion patterns using advanced AI algorithms, and instantly transmit alerts through loT-based communication modules.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121484 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND IMPLEMENTATION AF AN IOT ASSISTED CLOSED LOOP BLDC MOTOR DRIVE USING A MOSFET BASED VOLTAGE SOURCE INVERTER WITH PWM TECHIQUES

(51) International classification	:H02P6/08, H02M7/42, H02M7/5395, G16Y40/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
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(72)**Name of Inventor :**
1)M MANJULA
2)R VIGNESH
3)T MADHUVANAN
4)P DHARANYA

(57) Abstract :
ABSTRACT OF THE INVENTION The proposed innovation presents the design and implementation of an IoT-assisted closed loop BLDC motor drive that integrates advanced power electronics, control techniques, and loT connectivity for intelligent and efficient motor control. The system employs a MOSFET-based Voltage Source Inverter (VSl) that efficiently converts DC power into variable AC output with low conduction losses and high switching speed. Using Pulse Width Modulation (PWM) techniques, the inverter precisely regulates the voltage and current supplied to the BLDC motor, ensuring smooth commutation, reduced torque ripple, and high dynamic response. A closed-loop feedback mechanism with Hall Effect sensors continuously measures the actual motor speed and compares it with the reference speed set by the user. The microcontroller processes this feedback and automatically adjusts the PWM duty cycle to maintain constant speed under changing load or supply conditions. The integration of loT technology enables real-time data monitoring, remote control, and performance analysis through cloud-based dashboards or mobile applications, enhancing user convenience and system intelligence. Additionally, the system incorporates fault detection and protection features such as overcurrent, overvoltage, and overheating protection to ensure safe and reliable operation. The proposed model offers high efficiency, compact design, and low maintenance, making it a cost-effective and scalable solution for a wide range of applications including industrial automation, electric vehicles, HVAC systems, renewable energy, and smart home technologies. Overall, this innovation bridges the gap between conventional motor control systems and modern smart technologies by providing an energy-efficient, remotely accessible, and intelligent BLDC motor drive system.

No. of Pages : 5 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121485 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART INRUSH CURRENT LIMITER USING MOSFET BASED SOFT START CONTROL FOR SOLAR INVERTER LOADS

(51) International classification	:H02H9/00, H02M1/36, H02M7/42
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(72)**Name of Inventor :**
1)C PRATHEEBA
2)T KAVIYA
3)TK SANJAIY
4)K NIRANJANKUMAR

(57) Abstract :
The innovation introduces an active MOSFET-based inrush limiting and soft-start system for solar inverter DC-link applications, replacing conventional resistor or NTC recharge methods with a precise, semiconductor-controlled approach. A pass MOSFET and controller generate a controlled drain/load-node voltage ramp, defining inrush current to ensure predictable surge control across varying load conditions. A decoupled ramp network independently sets the slew rate, enabling rapid fault response and avoiding the limitations of RC gate soft-start circuits. Integrated protections such as undervoltage/overvoltage lockout, active current limiting via a sense resistor, fast overcurrent detection, and a programmable circuit-breaker timer maintain MOSFET safe operating area during faults. After recharge, a bypass relay or low-RDS(on) MOSFET engages to minimize conduction losses in steady state. The design supports unidirectional or bidirectional power paths, offers programmable parameters for different DC-link capacitances and PV/battery ratings, and maintains consistent startup behavior over temperature and source variations. By shaping the voltage ramp and coordinating with inverter PWM sequencing, it reduces EMI and prevents upstream nuisance trips, while enabling fast, safe restarts without thermistor cool-down delays resulting in a compact, efficient, and reliable inrush management solution for solar and UPS power systems.

No. of Pages : 6 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121486 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND IMPLEMENTATION OF A SNUBBER CIRCUIT FOR MOSFET BASED INVERTER IN AN RESIDENTAL UPS SYSTEMS

(51) International classification	:H02M1/34, H02J9/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(72)**Name of Inventor :**
1)V ARUN KUMAR
2)K VEERAMANI
3)S DINESH KUMAR
4)S D MOORTHI

(57) Abstract :
The design and implementation of a snubber circuit for MOSFET-based inverters in UPS systems involves creating a protective sub-circuit that controls voltage spikes, ringing, and switching transients typical in power electronics. The snubber circuit is crucial for enhancing the reliability and efficiency of MOSFET switches in the inverter stage of the UPS by mitigating the high dv/dt and voltage overshoot caused by rapid switching and inductive load effects. Innovation Abstract in Detail The snubber circuit typically employs an RC (resistor-capacitor) topology placed as close as possible to the MOSFET to minimize parasitic effects. When the MOSFET turns off, the snubber capacitor absorbs the inductive energy that otherwise causes damaging voltage spikes on the MOSFET drain. The resistor then dissipates this energy, preventing high discharge currents back into the device, protecting it from overstress and increasing, device longevity. A key innovative approach in modem UPS MOSFET inverter design is the use of regenerative snubber circuits. Unlike dissipative RC snubbers that waste energy as heat, regenerative circuits recover the energy stored in the snubber capacitor back to the DC bus or supply, thus improving overall system efficiency. This is implemented via auxiliary DC-DC converters operating with zero-voltage switching (ZVS) to achieve soft commutation, reduce losses, and suppress electromagnetic interference. Mathematically, the RC snubber components are carefully selected based on load inductance, MOSFET switching characteristics, and desired damping of voltage transients. The snubber capacitor is sized to absorb the switching energy, while the resistor is sized to limit the discharge current and power dissipation. In high-frequency applications like UPS inverters, this design must balance energy absorption, switching losses, thermal dissipation, and physical size constraints.

No. of Pages : 6 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121497 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AETHER SHADE-SOLAR POWERED PARASOL FOR SMART SHADING AND SMART FARMING

(51) International classification	:G01D 21/02, G06Q 50/02, A01G 25/16, G01N 33/24, G01W 1/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.T.SREEREKHA
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3)A.SAMEER ANWAR

(57) Abstract :
Farmers worldwide are facing a convergence of stresses that threaten livelihoods and food security: more frequent extreme weather and climate impacts, sharply higher input and energy costs, fragile market and supply-chain linkages, rising indebtedness and mental-health crises, chronic labour shortages and mechanisation gaps, and growing pest/disease pressures. The Al AgroShield is an innovative, Al-powered crop monitoring solution designed to support farmers with real-time insights into crop health. The device integrates sensors to monitor temperature, humidity, soil moisture, and sunlight levels, all powered by solar energy. It features a digital display and mobile connectivity to present live data, along with voice alerts in local languages for user-friendly communication. This smart system helps in early detection of crop issues, enabling timely interventions and improved productivity. Al AgroShield not only promotes precision farming but also supports environmental sustainability and rural empowerment.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121501 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI LANGUAGE RHYMING TOY FOR KIDS

(51) International classification	:G09B 19/06, G09B 5/04, G09B 19/04, A63H 33/00, G09B 5/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Sadum Ramya SREE
2)Dr.Irin Loretta
3)Dr Ramya Mohan

(57) Abstract :
The Multi-Language Rhyming Teddy is an interactive educational toy designed to introduce children to the beauty of languages through playful rhymes. Combining soft, comforting design with smart technology, the teddy recites poems, lullabies, and rhymes in multiple languages, helping young learners develop early linguistic skills, phonetic awareness, and cultural appreciation. Equipped with language selection features, adaptive learning algorithms, and engaging voice modulation, the teddy creates an immersive and personalized experience. It aims to support early childhood education, enliance memory retention, and encourage a love for language learning in a fun, emotionally supportive environment. Its portable design makes it perfect for use at home, during travel, or even in classroom settings. Regular updates to its content library ensure that children are constantly introduced to fresh, culturally diverse material. The Multi-Language Rhyming Teddy not only entertains but also shapes young minds to become more empathetic, confident, and globally aware individuals, preparing them for a connected world.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121502 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE WASHING MACHINE

(51) International classification	:D06F 33/02, D06F 34/28, D06F 39/00, D06F 34/32, D06F 39/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)D. Mahesh babu
2)Dr Rama A
3)Dr Ramya Mohan

(57) Abstract :
The present invention relates to a portable washing machine designed for compact living spaces and on-the-go usage, featuring an intuitive user interface optimized for ease of operation by both tech-savvy and non-technical users. The device integrates a smart control system with enhanced feedback mechanisms, including a high-contrast, backlit display and tactile/audible button responses to improve user interaction. The washing machine incorporates automatic cycle control with real-time monitoring of drum rotation and water levels, providing accurate status updates and energy-efficient operation. Additionally, the system supports safety features such as automatic shutoff and customizable wash modes. The invention addresses limitations of prior art by combining portability, user-friendly navigation, and reliable sensor accuracy, thereby offering a smart, accessible, and energyefficient laundry solution suitable for urban, mobile, and off-grid environments signific

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121503 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADVANCED ELECTRIC SHOE DRYER

(51) International classification	:A47L 23/20, F26B 9/06, F26B 21/10, F26B 3/28, A61L 2/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)M Lakshmi Narayana Reddy
2)RAJESH A
3)Dr Ramya Mohan

(57) Abstract :
The Advanced Electric Shoe Dryer project aims to develop a compact, efficient, and userfriendly device designed to dry shoes effectively using controlled heat and air circulation. Unlike traditional methods such as sunlight exposure or basic electric warmers, this advanced dryer utilizes smart technology to optimize temperature, humidity detection, and timing, ensuring rapid drying without damaging shoe material. Equipped with components like PTC heating elements, air blowers, and temperature sensors, the system offers customizable modes for various shoe types. Additional features may include a deodorizing function, foldable design, and touch-based controls. This project combines modem drying technology with practical usability to deliver a convenient and hygienic solution, ideal for everyday and travel use.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121504 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART NECK COOLING FAN FOR BIKERS,RIDERS,AND RUNNER

(51) International classification	:F04D 25/16, F04D 25/08, A41D 13/05, A41D 13/002, F04D 25/10	(71)**Name of Applicant :** **1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES** Address of Applicant :SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES, SAVEETHA NAGAR, THANDALAM, CHENNAI, TAMIL NADU, INDIA-602105 Tamil Nadu India (72)**Name of Inventor :** **1)Shaik Abbas** **2)RAJESH A** **3)Dr Ramya Mohan**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The Smart Neck Cooling Fan is a user-friendly, wearable cooling device developed for bikers, runners, and individuals exposed to heat during outdoor activities. Designed to provide instant relief from sweat and overheating, this device uses a dual-fan system powered by a rechargeable battery and controlled viti a simple on/off switch. Unlike complex loT systems, this fan is built for simplicity, portability, and efficiency with no need for mobile apps, Bluetooth, or automatic temperature control. Its lightweight neckband stmcture fits comfortably around the neck and directs airflow toward the face and upper body to maintain comfort during commutes or exercise. Built with durable materials and efficient components, the Smart Neck Cooling Fan is rechargeable via USB and suitable for daily use. Ideal for athletes, delivery riders, commuters, and outdoor workers, this project delivers a practical solution to heat discomfort using accessible technology.VSS

No. of Pages : 6 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121505 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS VISION POD WITH NFC ACTIVATION FOR TEACHERS CREATING ONLINE CLASSES AND YOUTUBE CONTENT

(51) International classification	:H04N 5/232, G06Q 50/20, H04N 5/225, G06K 7/10, H04N 5/76
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)M Lakshmi Narayana Reddy
2)RAJESH A
3)Dr Ramya Mohan

(57) Abstract :
The design patent known as ��Autonomous Vision Pod with NFC Activation - A Smart Camera Tracking Solution for Educators and Creators� introduces a compact, intelligent recording assistant tailored to modern digital content needs. This innovative device features a motorized rotating base that automatically follows the user's movement using real-time face tracking, ensuring the subject remains perfectly framed during video recording. What distinguishes this design is its seamless NFC-based activation system, allowing users to power on and operate the device with it simple tap of an authorized NFC card�eliminating the need for physical buttons or remote controls. Further enhancing its user-friendly nature, the device integrates gesture recognition, enabling it to switch tracking focus between individuals using simple hand signals, such as the "OK" gesture. Designed with educators, YouTubers, and online presenters in mind, the pod combines sleek aesthetics, intuitive operation, and compact ergonomics, fitting effortlessly into various teaching and recording environments. This solution delivers a handsfree, efficient filming experience for today�s mobile educators and digital content producers.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121506 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR REDUCING TIME DELAY IN LIVE TRANSMISSION OF AN EVENT

(51) International classification	:H04N 21/2343, H04N 21/24, H04N 21/647, H04N 21/442, H04N 21/2385
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. V. Rajmohan
2)DR. A. RAJA
3)Dr Ramya Mohan

(57) Abstract :
A system designed to deliver live events with minimal delay, this solution utilizes innovative techniques to optimize the entire transmission process. By employing adaptive encoding, parallel data streaming, and edge computing, the system effectively reduces latency and ensures a seamless viewing experience for the audience. Adaptive encoding dynamically adjusts the video quality based on network conditions, optimizing bandwidth usage and minimizing buffering. Parallel data streaming divides the video into multiple streams, allowing for more efficient delivery and reducing the impact of network congestion. Edge computing brings processing power closer to the end-user, decreasing transmission distances and latency. Furthermore, the system incorporates predictive network analytics to select optimal transmission paths, avoiding network bottlenecks and ensuring smooth delivery. Advanced error correction mechanisms safeguard data integrity, preventing disruptions and maintaining the quality of the live broadcast. These combined technologies enable the system to deliver high-quality, low-latency live streams across various networks and devices, providing a superior viewing experience for audiences worldwide

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121507 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : COMPOSITION OF 1,2,3-SELENADIAZOLE CONTAINING COMPOUNDS WITH PHARMACOLOGICAL PROPERTIES

(51) International classification	:A61P35/00, A61P31/04, A61P31/10, A61K9/00, C07D293/02, C07D293/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. K Kalpana
2)Dr. M. Murphy
3)Dr Ramya Mohan

(57) Abstract :
A system designed to deliver live events with minimal delay, this solution utilizes innovative techniques to optimize the entire transmission process. By employing adaptive encoding, parallel data streaming, and edge computing, the system effectively reduces latency and ensures a seamless viewing experience for the audience. Adaptive encoding dynamically adjusts the video quality based on network conditions, optimizing bandwidth usage and minimizing buffering. Parallel data streaming divides the video into multiple streams, allowing for more efficient delivery and reducing the impact of network congestion. Edge computing brings processing power closer to the end-user, decreasing transmission distances and latency. Furthermore, the system incoiporates predictive network analytics to select optimal transmission paths, avoiding network bottlenecks and ensuring smooth delivery. Advanced error correction mechanisms safeguard data integrity, preventing disruptions and maintaining the quality of the live broadcast. These combined technologies enable the system to deliver high-quality, low-latency live streams across various networks and devices, providing a superior viewing experience for audiences worldwide.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121508 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-ENABLED SMART HELMET FOR REAL-TIME INDUSTRIAL WORKER SAFETY AND HEALTH MONITORING

(51) International classification	:A42B 3/04, A42B 3/30, G08B 21/02, G08B 21/14, G01N 33/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr M Tamilselvi
2)Dr. Thandaiah Prabhu
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(57) Abstract :
Workers are frequently exposed to dangerous situations that can result in serious injuries or even death in industrial settings like manufacturing facilities, chemical plants, mining areas, and construction sites. Because of changing environmental hazards and the absence of realtime health and danger detection systems, ensuring their safety and well-being is a constant problem. By combining cutting-edge sensing technologies, sophisticated decision-making algorithms, and wireless communication modules into a single wearable device, the proposed invention presents a revolutionary Al-enabled smart helmet system intended to proactively monitor and protect industrial workers. In order to track environmental factors including ambient temperature, humidity, noise levels, poisonous gas levels, and abrupt motion or fall detection, as well as physiological data like heart rate, body temperature, and pulse oximetry, this smart helmet integrates a large number of sensors. These sensors gather data continually, and a microcontroller or single-board computer (such as the Raspberry Pi or ESP32) embedded with edge Al algorithms processes the data in real-time. In order to provide instant situational awareness, sophisticated machine learning algorithms examine the data and identity anomalies including overheating, exhaustion, hypoxia, gas leaks, falls, or unresponsive medical problems. Through a variety of communication channels, the system can automatically produce notifications once a risk has been identified. To stop cascading mishaps, alerts can be sent by SMS or app to supervisors or safety officers, audio-visual indications (like as buzzers or flashing LEDs on the helmet), or direct orders to stop neighboring equipment. In the event of an emergency, the GPS module on the helmet will send the worker's location. The smart helmet operates by an integrated solar panel and rechargeable battery pack, allowing for continuous operation without dependency on the grid and ensuring the system's sustainability and usability in distant or under-resourced settings. In industrial areas with poor connectivity, it makes use of low-power wide-area network (LPWAN) protocols like LoRa or Zigbee to guarantee long-distance data transfer. Furthermore, the majority of data processing may be done locally when edge computing is used, which reduces latency and bandwidth consumption and makes threat detection quicker and more precise.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121510 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED IOT SOLUTION FOR M-SAND QUALITY MONITORING SYSTEM

(51) International classification	:G01N 15/02, G06Q 50/08, G06N 3/08, G06K 9/00, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)S.D.Vijayakumar
2)K.Elango
3)P.Deepak
4)S.Dinesh

(57) Abstract :
7. ABSTRACT OF THE INVENTION This invention relates to an Al-powered quality assessment system, specifically designed for the fast, accurate, and automated evaluation of Manufactured Sand (M-Sand) used in construction. The system integrates artificial intelligence with loT-based sensing technology to automate the critical stages of sand image acquisition, particle analysis, impurity detection, and grade classification, thereby reducing manual laboratory testing while maintaining user interaction through a mobile application. The system employs a cloud-connected Al engine as the central analytical unit. A mobile device captures images of the M-Sand sample and transmits them to the server, where preprocessing techniques such as color quantization, thresholding, and contour segmentation extract particle features from the image. Machinelearning models evaluate parameters including particle size distribution, texture consistency, color variation, and impurity levels to determine the quality grade of the sand. loT sensors measure supplementary factors such as moisture content, temperature, and density, ensuring precise and environment-aware assessment of the sample. 0) ��) re 0. CD The device features support for battery or solar-powered loT modules, enabling deployment in remote or semi-outdoor construction environments such as field labs, material stockyards, and site offices. A streamlined rnobile interface allows users to upload images, view results, retrieve historical reports, and monitor sensor readings. Real-time alerts and status indicators provide intuitive feedback during analysis and report generation. CM E o Designed with a modular architecture, the system supports easy maintenance, scalability, and integration with existing construction workflows. Its automated evaluation, remote accessibility, and data-driven grading make it well-suited for builders, contractors, government quality-control bodies, and material suppliers seeking reliable, rapid, and consistent M-Sand quality assurance.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202541121511 A
(19) INDIA
(22) Date of filing of Application :04/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI-MODAL PRIORITY EDGE INFERENCE AND DIRECTIONAL HAPTIC SMART HAT FOR VISUALLY IMPAIRED PEOPLE

(51) International classification	:A42B 1/24, A42B 3/04, A42B 3/30, G01C 21/16, G01S 15/931
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)M.Bharath
3)S.Kowsalya
4)R.Nithish

(57) Abstract :
ABSTRACT OF THE INVENTION The present invention relates to an intelligent wearable assistive device, herein referred to as a Smart Hat, specifically designed to enhance situational awareness and mobility for visually impaired individuals. The invention integrates a camera module, ultrasonic range sensors, and an inertial measurement unit (IMU) into a compact head-mounted platform powered by a microcontroller or embedded Al processor. These heterogeneous sensors continuously capture multimodal data including object class, distance, obstacle geometry, user motion, and environmental variations. A lightweight, priority-based edge inference engine operates locally on the device to fuse visual, ultrasonic, and inertial inputs. The processor executes compressed neural network models capable of performing real-time object detection, face identification, motion vector estimation, and hazard prediction under diverse lighting and environmental conditions. Sensor data is converted into hazard scores based on object proximity, trajectory, speed, and identity confidence. These scores are mapped to an intelligent feedback layer consisting of a directional haptic array positioned around the hat. CD ��) re 0. CD The haptic array delivers encoded vibration patterns that communicate object direction, relative danger level, and navigation recommendations to the wearer. Urgent hazards, such as approaching vehicles, high-speed objects, or close-range obstacles, trigger stronger and faster vibration bursts, while non-critical detections produce gentle, low-frequency signals. The invention eliminates reliance on cloud processing by using highly optimized edge-AI models, ensuring complete offline operation, low latency, and enhanced user privacy. CM E o in CM Tf in CM o o o in CM The Smart Hat thus serves as a practical, low-cost, and intuitive mobility aid, offering an efficient method of real-time hazard awareness without requiring visual interpretation or audio overload. By combining multi-sensor fusion, edge intelligence, and directional haptic communication, the invention significantly improves independent navigation and personal safety for visually impaired users in complex real-world environments.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121512 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART SHOE FOR FOOT ULCER DETECTION

(51) International classification	:A61B 5/00, A61B 5/1455, A61B 5/145, A61B 5/0205, A61B 5/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)B.S.Kavya Sree
3)M.N. Samyuktha
4)V.Adithya

(57) Abstract :
7. ABSTRACT OF THE INVENTION The present invention introduces a Smart Shoe-Based Foot Ulcer Detection System, designed to provide continuous, real-time monitoring of physiological parameters associated with diabetic foot complications. The system integrates multiple sensors.a vibration-response sensor, an SpOz optical sensor, and a moisture sensor.strategically embedded within the inner structure of the shoe to capture critical indicators related to peripheral neuropathy, blood perfusion, and sweat . accumulation. The vibration-response sensor evaluates peripheral neuropathy by generating controlled mechanical stimuli and measuring the user's sensory response. The SpOz sensor continuously monitors tissue oxygen saturation and detects variations in blood circulation, which are early markers of ischemia. The moisture sensor identifies abnormal perspiration levels inside the footwear, an important fector contributing to microbial growth and skin breakdown. All sensor data is collected and processed by an onboard microcontroller, which analyzes the readings using threshold-based algorithms. The processed data is transmitted wirelessly to a dedicated mobile application, enabling users and healthcare professionals to review real-time conditions, historical trends, and receive timely alerts. When abnormal patterns.such as reduced oxygen saturation, high moisture levels, or unpaired vibration response.are detected, the system generates notifications to facilitate early medical attention. CD ��) re 0. CD This invention provides a non-invasive, wearable, and cost-efficient solution for early detection of ulcer-forming conditions in diabetic patients. By enabling continuous monitoring outside clinical settings, the smart shoe enhances user safety, supports preventive healthcare, and significantly reduces the risk of advanced diabetic foot ulcers, amputations, and related complications. The proposed system represents a transformative step forward in remote health monitoring and diabetic foot management.

No. of Pages : 7 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121513 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART HELMET FOR ACCIDENT DETECTION AND LOCATION ALERT

(51) International classification	:A42B 3/04, A42B 3/30, G08B 21/02, G08B 25/10, G08G 1/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)S.Krishnan
3)K.S. Maileeshwar
4)K. Karthikeyen

(57) Abstract :
ABSTRACT OF THE INVENTION Ii The present invention discloses a wearable loT-based Smart Helmet designed for intelligent accident detection and automated emergency alert communication, specifically developed to reduce fatalities among two-wheeler riders. The invention integrates a multi-sensor architecture comprising an accelerometer-gyroscope sensor (MPU6050), a GPS receiver module (NEO6M), a GSM communication module (S1M800L), and a low-power microcontroller unit (ESP32). The helmet continuously monitors rider dynamics by capturing real-time linear acceleration, angular velocity, and motion variations. A threshold-based impact detection algorithm processes these data streams to identify abnormal acceleration peaks, abrupt changes in orientation, or high-intensity impacts indicative of a road accident. Upon detection of an accident event, the microcontroller activates the GPS module to acquire accurate geospatial coordinates of the incident location. The GSM module subsequently transmits an automated emergency alert to pre-configured contacts through SMS, containing a Google Maps hyperlink for immediate navigation to the accident site. The entire process.from impact detection to alert dispatch.is executed within 30 seconds, thereby significantly reducing delays associated with traditional emergency response mechanisms. The system operates independently of mobile phones, ensuring functionality even when the rider's smartphone is switched off, damaged, or unavailable, thus improving reliability in critical conditions. ��ns 0. ��2 CM E ior ?5 in CM The invention offers a compact, lightweight, low-cost, and scalable solution adaptable to any standard helmet without compromising comfort or usability. Additionally, the system minimizes false alarms through multi-step verification logic, noise filtering, and detection thresholds optimized for realworld driving conditions. The Smart Helmet enhances safety, reduces golden hour delays, and provides a practical technological intervention to reduce mortality in motorcycle accidents. The invention is suitable for mass deployment and can be extended with additional safety features such as alcohol sensing, fall detection, or emergency calling systems.

No. of Pages : 7 No. of Claims : 7

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(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121514 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BEESAFE HIVE: INTELLIGENT AND CONTROL FOR BEE ACTIVITY

(51) International classification	:A01K 47/06, A01K 51/00, A01K 47/00, A01K 47/02, A01K 57/00	(71)**Name of Applicant :** **1)NANDHA ENGINEERING COLLEGE** Address of Applicant :DEPT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE ERODE-PERUNDURAI MAIN ROAD, VAIKKAALMEDU, TAMIL NADU, INDIA-638052 Tamil Nadu India (72)**Name of Inventor :** **1)S.A.Suje** **2)M.Fawzia Parvin** **3)R,V.Pradeep** **4)L.S.Tharikaa**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
ABSTRACT OF THE INVENTION The invention relates to an Internet of Things (loT)-based smoke-free beehive monitoring and control system designed to support safe, eco-friendly, and modem beekeeping practices. Traditional beekeeping often uses smoke to calm bees during honey collection or hive inspection, but this method can stress the bees, affect honey purity, and create health risks for both bees and beekeepers. To overcome these drawbacks, the present invention introduces a smart, automated, and non-invasive technology that can monitor the beehive without disturbing the bees or using harmful smoke. This invention uses multiple sensors integrated with a microcontroller to observe and analyze the conditions inside and around the beehive in real time. A humidity sensor measures the environmental moisture level surrounding the beehive tray to ensure that the hive remains in a healthy and favorable condition. A sound sensor is used to detect the presence and activity of bees by identifying their buzzing sound. The buzzing intensity is continuously monitored, and when the sound level rises above a threshold value of 50 units, it indicates abnormal bee movement or potential disturbance inside the hive. Additionally, a load cell with a maximum capacity of 1 kg is attached to measure the honey weight. When the detected weight crosses 50 grams, it indicates an increase in honey storage or bee activity inside the hive. The invention further includes an intelligent alert and response system to support realtime monitoring. When both the sound level and the honey weight exceed their respective threshold values, the microcontroller activates a buzzer to indicate unusual activity. At the same time, the system automatically sends an email alert to the beekeeper through foT-based communication, providing immediate information about the hive&#xfffd;fs condition. CD &#xfffd;&#xfffd;) re 0. CD Another unique feature of this invention is the use of a vibration motor. When the sound and weight limits are crossed, the vibration motor is activated to create gentle vibrations that safely cause the bees to move away from the hive without using smoke, enabling the beekeeper to check or handle the hive with reduced risk. CM E o Tf in CM By combining sensor technology, wireless communication, and automated responses, this invention provides a smart and eco-friendly alternative to conventional beekeeping. It reduces human intervention, prevents stress on bees, and improves the. overall safety and efficiency of hive management. The system supports modern sustainable farming practices by offering real-time monitoring, remote notifications, and a smoke-free method for handling beehives. Thus, the invention contributes to healthier beekeeping operations, better honey quality, and enhanced beekeeper safety.7

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121515 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EDU-CONNECT : A SECURE MERN-BASED E-LEARNING PLATFORM FOR STUDENTS

(51) International classification	:G09B 7/00, G06Q 50/20, G09B 7/04, G06F 17/30, G09B 7/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)A MAYAKRISHNAN

(57) Abstract :
7.ABSTRACT OF THE INVENTION In modem academic environments, students frequently encounter challenges in accessing structured, reliable, and organized learning materials due to outdated digital platforms, inconsistent content delivery and the lack of unified academic resource management. These limitations reduce learning efficiency and make it difficult for students to retrieve subject-specific notes, assignments, and study materials when needed. To address these problems, the present invention introduces EduConnect, a secure and scalable e-leaming platform developed using the MERN stack. The system integrates a React-based user interface for seamless navigation, a Node.js and Express.js backend for secure data processing and authentication and a MongoDB database for efficient storage and retrieval of semester-wise academic content. EduConnect enables instructors to upload study materials that are automatically validated, tagged, and indexed for quick access. The platform uses WebSockets and HTTP/2 to support real-time communication, allowing instant notifications, live updates and instructor-student interactions without requiring page reloads. This ensures smooth delivery of time-sensitive academic updates such as announcements, new uploads and assignment deadlines. EduConnect incorporates a machine-learning recommendation engine that analyzes student engagement patterns�such as subject interest, resource access fi'equency and browsing activity�to generate personalized study material suggestions. This supports adaptive and focused learning, helping students improve academic performance. CD O) re 0. CD The system ensures high security through JWT-based authentication, HTTPS encryption and role-based access control, allowing safe handling of sensitive academic data: With its cloud-ready architecture, modular design and intelligent content management capabilities, EduConnect provides a reliable, efficient and unified digital learning ecosystem for students, instructors, and educational institutions.�&�m�

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121516 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SLEEP POSITION MONITOR FOR BABIES

(51) International classification	:A61B 5/11, A61B 5/00, A61B 5/113, G08B 21/02, A61B 5/0205	(71)**Name of Applicant :** **1)NANDHA ENGINEERING COLLEGE** Address of Applicant :ERODE-PERUNDURAI MAIN ROAD, VAIKKAALMEDU, TAMIL NADU, INDIA-638052 Tamil Nadu India (72)**Name of Inventor :** **1)S. Elango** **2)G.Chithra** **3)S. Gayathri** **4)M. Sindhu** **5)S. Sivaranjani**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
ABSTRACTOFTHEINVENTION The present invention discloses a Sleep Position Monitoring System for Infants, designed to minimize risks associated with improper sleeping postures, particularly those linked to Sudden Infant Death Syndrome (SIDS). The invention utilizes a microelectromechanical accelerometer sensor (ADXL345) capable of detecting multi-axis orientation changes in real time. The sensor continuously tracks the infant&#xFFFD;fs body angle relative to a predefined posture threshold. The sensed data is transmitted to a NodeMCU microcontroller, which executes programmed algorithms to classify the infant&#xFFFD;fs sleeping position into safe and unsafe categories based on tilt-angle analysis. A stable and regulated power supply, constructed using a 7805 voltage regulator, diode protectionand filter capacitors, ensures uninterrupted and noise-free operation of the device. When the microcontroller identifies an unsafe orientationsuch as, a face-down or excessively tilted posture, it activates an alert module that consists of a high-intensity LED and an audible buzzer to immediately notify caregivers. In addition, a seven-segment display unit is incorporated to provide real-time visual indication of the posture status, enabling quick and straightforward monitoring without the need for external devices. CD &#xFFFD;&#xFFFD;) re 0. CD CM E o The invention is uniquely designed to be independent of cameras, wireless communication, or internet-based systems, thereby ensuring complete privacy, reduced power consumption and improved reliability. Its standalone nature makes it particularly suitable for continuous overnight monitoring in both home and clinical environments. The device is compact, lightweight and assembled on a printed circuit board housed within a protective enclosure, offering durability and ease of deployment. By providing immediate alerts during unsafe sleep positions, the invention aims to support early caregiver intervention and reduce health hazards associated with infant sleep posture. (D in CM in CM o o o in CM Furthermore, the simplicity of the hardware architecture and the low cost of components used make the invention highly accessible for widespread adoption, especially in low-resource settings. The system&#xFFFD;fs modular design allows for future enhancements such as adding physiological monitoring sensors or integrating advanced analytics. Overall, the invention represents a practical, efficient and scalable solution for enhancing infant safety through real-time posture monitoring, contributing significantly to child health protection and preventive care technologies.

No. of Pages : 6 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121517 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART INDICATOR TURN OFF SYSTEM FOR FORGOTTEN APPLIANCES

(51) International classification	:B62J 6/00, B62J 6/16, B60Q 1/34, B62J 6/20, B62J 99/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION CD O) re 0. CD CM E o The increasing number of two-wheeled vehicles on e road has amplified the need for improved riderassistance technologies that reduce human error and enhance road safety. This invention introduces a sensorbased Smart Indicator Auto Turn-Off System that automatically cancels a vehicle s turn indicators once a turn is completed, preventing accidental misuse, rider distraction, and safety risks caused by forgotten indicator signals The system integrates an Arduino-based microcontroller, a handlebar rotation sensor (potentiometer oi gyroscope), and a relay switching module to deliver an accurate, reliable, and real-time safety enhancement foi motorcycles and scooters. At the core of the invention, the handlebar sensor continuously measures steering angle and transmits realtime data to the microcontroller, which analyzes rotation patterns to determine whether the rider is initiating, performing, or completing a turn. Based on, the detected steering behavior, the relay module activates oi deactivates the left or right indicator lights with high precision. This ensures that the indicator remains ON only during an actual turning maneuver, while eliminating false triggers from minor handlebar adjustments or roac vibrations. Simultaneously, an integrated buzzer or LED alert module provides immediate feedback at the moment of auto-cancellation, informing the rider that the turn is completed and the indicator has been switched OFF. This enhances rider awareness and reinforces safe riding behavior. The system operates with low latency, minima power consumption, and strong noise-filtering capability, ensuring stable performance across varying road and environmental conditions^ The invention delivers a fully automated, hands-free indicator control mechanism that reduces rider workload, prevents confusion among other road users, and significantly improves traffic safety. Its compact, low- cost, and modular design supports seamless integration into existing and new two-wheeler models. Overall, this Smart Indicator Auto Turn-Off System provides a practical, scalable, and dependable solution for minimizing accidents caused by manual indicator misuse while enhancing rider convenience and roadway safety.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121519 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MACHINE LEARNING ALGORITHMS FOR PREDICTING OPTICAL PROPERTIES OF NANOMATERIALS

(51) International classification	:G06N 3/08, G06N 3/04, G06N 20/00, G01N 15/02, G06N 20/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Dhivya A
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5)Dr. Gangadevi K
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3)Dr. Dhivya A
4)Dr. Raj Kumar Gupta
5)Dr. Gangadevi K
6)Dr. Padmavathy V

(57) Abstract :
Abstract The present invention relates to a machine learning-based system for predicting the optical properties of nanomaterials, enabling accelerated materials design and development. The invention integrates experimental data, computational modeling, and artificial intelligence (Al) algorithms to establish conelations between the structural and compositional features of nanomaterials and their optical characteristics such as bandgap energy, absorption spectrum, refractive index, reflectance, and photoluminescence intensity. The system comprises a data acquisition module for collecting and preprocessing material descriptors including particle size, morphology, elemental composition, and synthesis parameters. These features are fed into a machine learning prediction model, which may include regression algorithms, ensemble methods, or deep neural networks. The trained model predicts the optical responses of nanomaterials with high accuracy and reduced experimental dependency. The invention further includes a user interface and cloud-based analytics framework that allows researchers to input material parameters and instantly obtain predicted optical behaviors. This approach significantly reduces the cost, time, and effort associated with conventional optical characterization techniques and supports datadriven material discovery and optimization. The invention can be applied in fields such as optoelectronics, photovoltaics, sensors, catalysis, and biomedical imaging, where precise control of nanomaterial optical properties is crucial.ncentra

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121520 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATIC KNOB-ACTUATING SAFETY DEVICE FOR LPG STOVES USING TIMER CONTROL

(51) International classification	:F24C 3/12, F24C 3/10, F23N 5/24, F23N 5/20, F23N 5/10	(71)**Name of Applicant :** **1)PERI INSTITUTE OF TECHNOLOGY** Address of Applicant :PERI KNOWLEDGE PARK, MANNIVAKKAM, CHENNAI, TAMIL NADU, INDIA-600048 Tamil Nadu India (72)**Name of Inventor :** **1)PranitAsherAbihu A K** **2)Naveen Raj S** **3)Abdul Rahiman S** **4)Thirumalaiselvan T** **5)Joshua J** **6)Gokulnath M**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The invention is connected with the miniature clamp-based type of automatic gas stove knob control system that increases the level of cooking safety through the addition of a timer-based flame control and shutoff system. The system is based on Arduino microcontroller, touchscreen interface and a motor driven actuator that fits external to any standard LPG stove and that does not entail structural adjustments. The user turns the stove on by hand and uses the touchscreen display to select the required amount of time to cook. A geared DC motor with the help of rotary encoder feedback and limit switches accurately steps the knob in fixed steps ON, SIM, and OFF depending on programmed timing sequences. When the timer is about to finish a device changes the knob to SIM, then gives an audible signal by ringing a buzzer, and then switches the stove to OFF. To be on the safe side, an emergency stop button will allow manual intervention directly, and an acknowledgment button will give the user the ability to pause or interrupt the automated shutdown procedure. CD ��) re 0. CD CM E o o CM in CM in CM o cs s o o in CM The system is able to solve the common kitchen safety issues which include forgotten cooking, wasting of gas, overcooking and possible fire hazards that are brought about by manual control of the stoves. The current solutions are mostly devoted to gas-leakage detection or flame detection, whereas mechanical timers and loT-based gas-appliances need to be changed in terms of installation or cannot be directly controlled by a knob. This gap is addressed by the design of the proposed device, which gives a portable, battery-powered, user-friendly and non-invasive knob actuator that can be used to automate the timed cooking process without modifying the design of the stove itself. The hardware is an Arduino controller, touchscreen display, geared DC motor, rotary encoder, limit switches, buzzer, manual push buttons, rechargeable power supply, and universal clamp system. Timing, motor actuation, encoder-based position tracking, safety logic, and power optimization are handled using complementary software algorithms. m CM o CM I - x: -r CD kA p. Sr- r * r T * ⁂ V n ⁂ * o I Tf o f. c ' ⁂fI ' '-i- ri.r f 'ey ⁂f V ⁂ 1. ⁂ T ⁂ 1 ⁂ t' -X This invention is a cost-effective and convenient automation option that can be applied to the home, hostels, and small commercial kitchens by offering high quality timed flame control, automatic shutoff, and increased user safety.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121521 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT-INTEGRATED SMART HELMET SYSTEM FOR ACCIDENT DETECTION, EMERGENCY ALERTING, AND RIDER SAFETY ENFO

(51) International classification	:A42B 3/04, A42B 3/30, G08B 21/02, G08B 25/01, G08G 1/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Vignesh M
5)Sanjay S
6)Maniarasan J

(57) Abstract :
The current invention is connected with an intelligent, loT-based Smart Helmet system, which is aimed at significantly decreasing the number of road accidents caused by the delays of the emergency maintenance and the safety compliance of the riders. The system combines an interconnection of sensors and communication units such as an MPU6050 accelerator-gyroscope, GPS, GSM, MQ-3 alcohol sensor, and IR helmet-wear detector to enable constant monitoring, real-time accident detection and automated safety enforcement. The Smart Helmet uses MPU6050 sensor to monitor the sudden hits, abnormal deceleration and angular changes. Upon detection of an accident, the embedded GPS module takes the exact geographical position, and the GSM module sends the automatic SOS alert to emergency contacts or emergency service providers. This is because this automated communication will significantly decrease the critical response window in the event of an accident, and it is more likely to receive prompt medical care. CD ��) re 0. CD CM E o CM in CM Pre-ride safety validation mechanisms are inbuilt into the system to avert accidents before they take place. The MQ-3 sensor will detect the alcohol level of the rider and the IR sensor will ensure the wearer wears a helmet. These safety measures are electronically checked to the ignition of the motorcycle using a special Bike Module. In case of drunkenness or in case of not wearing the helmet, the system will cut off the engine ignition through a relay module, thus presenting a mandatory nature to obey the safety of the rider. Tf in CM o 00 o o in CM in CM o CM I o d) /r o' I Tf o A Sense/Detect/ Confirm/ Notify approach controls system action. The sensor is continuously compared to calibrated safety limits and sensor data is collected and compared against safety thresholds, and a debounce-based confirmation algorithm is used to filter false positives due to potholes, vibrations, or sudden high intensity but non-hazardous movements. When an accident or (1.1 f. nJ nJ I't J ⍰eIt -1__ ' t-n ⍰e f ⍰⍰ ⍰e1 'a. ,f .1 r/ ,f 'F.. .. ,ej. -s * -XiL, * -XL. ⍰e f I I i i 'V a violation of safety is confirmed, relevant measures like ignition control or automatic notification of an emergency are carried out. Connectivity to cloud-based services and API (e.g., Twilio) guarantees the delivery of messages/voices alert. With active safety implementation, smart accident detection, and automated emergency communication, the proposed Smart Helmet System can establish a holistic safety ecosystem to keep the rider safe in advance, throughout, and after the accident occurs. This invention shows that the use of wearable technology with help of loT can revolutionize the safety of two-wheelers using real-time monitoring, decision-making and life-saving intervention.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121524 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENERGY-CONSTRAINED OPTIMIZED VEHICLE ROUTING SYSTEM USING GA, SA, ACO AND PSO FOR URBAN EV LOGISTICS

(51) International classification	:G06N 3/12, B60L 11/18, G01C 21/34, G06Q 10/08, G06N 3/006	(71)**Name of Applicant :** **1)PERI INSTITUTE OF TECHNOLOGY** Address of Applicant :PERI KNOWLEDGE PARK, MANNIVAKKAM, CHENNAI, TAMIL NADU, INDIA-600048 Tamil Nadu India (72)**Name of Inventor :** **1)Balaji R** **2)Nagalakshmi S V** **3)Pavithra S** **4)Diwakar S**
(31) Priority Document No	:NA	**5)Chukka Gayatri Preethi**
(32) Priority Date	:NA	**6)Gopika R**
(33) Name of priority country	:NA	**7)Heerashini S P**
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The significant issue with the urban logistics of Electric Vehicles (EVs) is the short range of electric vehicles, which restricts traveling long distances without the need to recharge the battery as often. This drawback renders the planning of efficient routes, the scheduling of deliveries, and energy-sensitive decision-making processes crucial to efficient fleet operation in the present day. To address these limitations, the invention proposes a smart optimization framework which is tailor-made with respect to the Electric Vehicle Constrained Delivery Routing Problem (EVCDRP). The proposed system is a combination of four highly developed metaheuristic algorithms, including Simulated Annealing (SA), Genetic Algorithm (GA), Ant Colony Optimization (ACO), and Particle Swarm Optimization (PSO) to produce optimized, battery-constrained delivery paths of EV fleet-based logistics. In contrast to traditional methods of Vehicle Routing Problem (VRP), the framework will make sure that all the calculated paths are feasible under battery capacity of each vehicle, to avoid failure in the middle of the route and unnecessary energy usage. The system also has a user-friendly visualization component that is designed specifically to serve large urban areas and allow the logistics operators to read and act on the results of tlie optimized routing. This boosts efficiency in delivery, minimizes downtimes in operations and helps to make the operations more sustainable and environmental friendly. Examining the four algorithms experimentally it was found that the Genetic Algorithm (GA) generated the most optimized output and this generated shorter routes and better battery performance. Through the use of the advantages of GA in the integrated system, the invention will greatly enhance the optimization of routes of EV fleets, which will, in the end, facilitate smarter decisions and encourage green urban logistics.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121542 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FARMFUSION AI-COMPLETE INTELLIGENT ECOSYSTEM FOR MODERN AGRICULTURE

(51) International classification	:G06Q 50/02, G06Q 30/06, G06N 20/00, G06N 3/08, G06Q 10/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)C MANl
2)S PRANESH KUMAR
3)A K SRINIVASH
4)S G SUGANTH

(57) Abstract :
7.ABSTRACT OF THE INVENTION FarmFusion Al is conceived as a comprehensive digital ecosystem that brings together multiple strands of modem agriculture into one unified platform. It leverages artificial intelligence to assist farmers with crop management, problem diagnosis, mechanization, and the procurement of essential inputs. At its core, the system integrates an NLP-powered chatbot that offers conversational guidance, a deep-learning image classification module capable of detecting crop diseases and soil abnormalities, a rental system for agricultural machinery such as harvesters, and a full-fledged e-commerce space for farm supplies. All of these services are delivered seamlessly through web and mobile interfaces designed for accessibility even in rural environments. The technological foundation of FarmFusion Al is built using React.js for the front-end experience, Node.js and Python for processing and Al operations, and MongoDB for secure, scalable data management. Cloud platforms fijrther enhance performance, ensuring reliability across varied user groups including farmers, suppliers, and machinery owners. The image analysis component was evaluated using a curated agricultural dataset, achieving close to 80% accuracy with balanced precision, recall, and Fl-score&#xfffd;an encouraging indicator of its diagnostic strength and real-world applicability. These results highlight its capacity to provide farmers with dependable insights derived from visual data. By weaving these capabilities&#xfffd;intelligent advisory support, real-time visual analytics, field-ready mechanization services, and a digital marketplace&#xfffd;into one cohesive system, FarmFusion Al empowers farmers to make timely, data-backed decisions. It reduces operational costs, enhances productivity, and steers agricultural practices toward sustainability. In essence, FarmFusion Al acts as a modem companion in the farming journey, offering technology-enabled support that simplifies tasks, strengthens decision-making, and fosters a more resilient agricultural ecosystem.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121543 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED EXAM HALL SEAT ALLOCATION SYSTEM

(51) International classification	:G06Q 50/20, G06N 3/12, G06Q 10/06, G06Q 10/00, G06N 3/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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2)D VINOPARKAVI
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7)S KIRUTHIKA

(57) Abstract :
7.ABSTRACT OF THE INVENTION The Automated Exam Hall Seat Allocation System introduces an Al-powered platform designed to intelligently generate fair, balanced and conflict-free seating arrangements for large student populations across multiple departments. The invention integrates a Genetic Algorithm based Optimization Engine that processes hall capacities, departmental distribution, student data and institutional seating rules to produce malpractice-resistant seating layouts in real time. This engine ensures maximum hall utilization, prevents clustering of students from the same department and eliminates duplicate seat assignments, thereby overcoming the limitations of manual or spreadsheet-based seat allocation methods. In addition, the system incorporates a Student Navigation and Access Module powered by a Graph Neural Network (GNN) capable of modeling the campus layout as a graph and guiding students to their designated exam halls. The MERN stack based web interface provides secure access for administrators to configure exams, schedule halls and generate seating, while students receive personalized seat information and hall details. The invention offers significant operational advantages, including reduced administrative workload, real-time automation, scalability for multi-campus deployment and enhanced examination transparency. This integrated system presents a comprehensive, intelligent and future-ready solution for modernizing examination management in educational institutions

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121544 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : RESUME SHORTLISTING USING NLP FOR IMPROVED RECRUITMENT EFFICIENCY

(51) International classification	:G06Q 10/10, G06Q 10/06, G06F 17/27, G06Q 10/00, G06N 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)A SATHEESH KUMAR
2)S SHRIRAM
3)G SRI VIGNESH
4)NSURENDAR

(57) Abstract :
7.ABSTRACT OF THE INVENTION The growing influx of job applications has made manual resume screening an increasingly inefficient and error prone task for recruiters. To overcome these challenges, this paper introduces an automated resume shortlisting framework powered by Natural Language Processing (NLP). The system leverages React js, Node.js and Flask to develop a responsive, scalable and user friendly recruitment platform that facilitates real time candidate filtering and ranking. By integrating Al based evaluation with cloud technologies, the proposed model enhances processing speed, accuracy and overall user experience for HR professionals. Furthermore, the framework incorporates modules for job recommendation and resume optimization that utilize NLP for semantic interpretation, skill extraction and candidate profiling. The combination of full stack technologies and intelligent backend APIs ensures dynamic data management and continuous system updates. Experimental analysis shows that the NLP enhanced platform significantly reduces screening time while improving candidate shortlisting accuracy, demonstrating its potential as an advanced HR technology solution.

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121545 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PNEUMATIC PICK AND PLACE ARM

(51) International classification	:G09B 25/02, B25J 15/06, B25J 15/00, G09B 19/00, G09B 25/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)M SENGOTTAIYAN
2)B J KATHIRAVAN
3)V SABARI
4)S VASANTHA KUMAR

(57) Abstract :
7.ABSTRACT OF THE INVENTION Automation is essential in modern manufacturing, where precision, reliability, and efficiency are critical. This project presents the design and development of a Pneumatic Pick and Place Arm, which uses compressed air to perform material handling tasks such as picking, lifting, and placing objects at desired locations. The system reduces human involvement in repetitive operations, enhances productivity, and ensures consistent accuracy. Students involved in the project gained practical experience in mechanical design, pneumatic circuit development, system integration, and automation principles. The project also promotes energy-efficient and sustainable engineering practices, supporting the United Nations Sustainable Development Goals, particularly SDG 4 (Quality Education), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 12 (Responsible Consumption and Production), by contributing to affordable, safe, and eco-friendly industrial automation solutions.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121546 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT ENABLED SMART ITEM TRACKER USING PREDICTIVE ANALYSIS

(51) International classification	:G07C 9/00, H04W 4/029, H04W 4/80, H04W 4/02, G06K 7/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)M.M.Kokila
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3)S.Guhan
4)G.Preethi

(57) Abstract :
7. ABSTRACT OF THE INVENTION The invention relates to an loT-enabled Smart Item Tracking System designed to prevent the misplacement of essential personal belongings such as keys, wallets, and ID cards. The system uses an ESP32 microcontroller attached to the item, allowing continuous wireless communication with a mobile application. This setup provides real-time monitoring of the item's proximity and status. The design ensures ease of use, portability, and efficient tracking functionality. i The ESP32 module estimates the distance between the user and the item by analyzing signal strength variations over Wi-Fi. This distance information helps determine whether the item remains within a predefined safe zone. When the item is within range, the mobile application allows the user to manually activate an onboard buzzer for easy indoor locating. This feature enhances convenience in situations where the item is misplaced nearby. If the item begins to move out of the safe range, the system automatically triggers a range alert. This alert is sent instantly to the user's mobile device, notifying them that the item is moving farther away. The early warning mechanism significantly reduces the risk of losing valuable belongings. Such proactive alert generation enhances user awareness and improves item security. CD ��) re 0. CD CM E o The system also integrates cloud connectivity through Blynk Cloud to support seamless communication between the ESP32 module and the mobile application. The cloud server facilitates the transmission of alerts, distance updates, and device status. This ensures consistent system operation even when the application is not actively accessed. The cloud-based architecture adds reliability and scalability. CD in CM in CM o cs CM o in CM Overall, the invention provides an efficient, compact, and cost-effective solution for personal item tracking using loT technology. The combination of proximity detection, range alerts, buzzer activation, and cloud connectivity enhances user convenience and safety. The system is suitable for household, workplace, hostel, and outdoor environments where the risk of item misplacement is high, making it a practical and dependable tracking solution

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202541121547 A
(19) INDIA
(22) Date of filing of Application :04/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : GUARDIAN HELMET : IOT POWERED SAFETY IGNITION SYSTEM

(51) International classification	:A42B 3/04, A42B 3/30, B62J 27/00, B62J 99/00, B62H 5/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)S. D. Vijayakumar
2)U.S.Bhavatharinika
3)S.Dhayanand
4)M. Mohamed Rasith

(57) Abstract :
7. ABSTRACT OF THE INVENTION The disclosed invention relates to a cost-effective, user-friendly ignition safety system designed for motorcycles and two-wheelers, aimed at enforcing proper helmet use through smart automation. The system comprises a helmet fitted with both a physical button switch and a male-female jack, ensuring that the helmet is worn and securely fastened by the rider. Embedded within the helmet is an HC-05 Bluetooth module, which communicates wirelessly with a dedicated smartphone application.Bluetooth Terminal.used by the rider. A microcontroller unit (ESP8266) installed on the vehicle continuously monitors the helmet�fs button and jack status, as well as the Bluetooth connection. Upon detecting that the helmet is properly in place and a secure Bluetooth connection has been established, the microcontroller activates a relay (rated lOA, 250V AC), which enables the ignition circuit, thus allowing the motorcycle to start. Conversely, if the helmet is not worn, inadequately fastened, or if the Bluetooth link fails, the ignition remains disengaged and a buzzer is triggered, providing immediate, real-time feedback to the user. The operational logic is implemented through embedded Arduino C code, with continuous sensor polling and output management ensuring that safety is always verified before and during bike operation. The system�fs feedback is instantly displayed in the Bluetooth Terminal app, indicating "Helmet Status: Weared Properly, Ignition Unit ON!" when conditions are met, and "Helmet Status: Weared Improperly, Ignition Unit OFF!" otherwise. CD ��) re 0. CD CM E o This invention leverages common, off-the-shelf hardware and does not require internet access or subscription services, enabling broad adoption and straightforward installation on existing motorcycles. It is specifically engineered for reliability, compliance with road safety norms, and habitual enforcement of helmet usage, thereby reducing the risk of injury from non-compliance and promoting a culture of responsible riding.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121548 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT - ENABLED SMART CLASSROOM AUTOMATION SYSTEM USING ML

(51) International classification	:G05B 15/02, G05B 19/418, H05B 37/02, H04L 12/28, G05B 19/042
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)A. K. Samundishwari
3)K. Harsith
4)Abel Shaji

(57) Abstract :
ABSTRACT OF THE INVENTION The invention relates to an loT-Enabled Smart Classroom Automation System designed to minimize energy wastage by intelligently controlling electrical appliances such as lights and fans based on real-time occupancy. The system utilizes a PIR motion sensor connected to an Arduino UNO for autonomous local decision-making, while an ESP32 microcontroller independently manages wireless communication with a cloud-based dashboard. This dualcontroller architecture ensures continuous automation even during internet outages, while enabling remote monitoring of appliance status. The Arduino UNO processes occupancy data from the PIR sensor and operates a relay module to switch appliances ON or OFF automatically. The ESP32 periodically transmits realtime device status, motion activity, and relay state to the user�fs mobile or web dashboard for seamless monitoring. This separation of automation logic and loT communication enhances system reliability and fault tolerance. In an enhanced embodiment, the invention incorporates a machine-learning regression model that analyzes historical occupancy patterns and appliance usage data. This predictive module estimates next-day energy consumption and potential energy savings, enabling smarter classroom management and improved electricity planning. The system thus evolves from simple automation to intelligent decision support. CD ��) re 0. CD When movement is detected, the system ensures immediate activation of appliances, improving user comfort and convenience. If no occupancy is observed for a predefined duration, the appliances are automatically switched OFF, preventing unnecessary power usage. These autonomous operations significantly reduce human dependency and eliminate energy wastage caused by negligence. CM E o co in CM Overall, the invention provides an efficient, scalable, and cost-effective solution for modem educational environments. By combining autonomous control, cloud connectivity, and predictive analytics, the system enhances energy efficiency, operational reliability, and sustainable campus management. The design is suitable for schools, colleges, training centers, and other institutional spaces that seek smart, low-maintenance automation with long-term energy savings.
O�����GFV

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121549 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART ACTUATOR-CONTROLLED PHYSIOTHERAPY ASSISTANCE DEVICE WITH REAL-TIME MOTION SENSING AND AUTO-ADAPTIVE THERAPY CONTROL

(51) International classification	:A61H 1/02, A61H 1/00, A61B 5/11, A61H 3/00, A61F 2/68
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)K.C.Raja
4)T. Bhuvanesh

(57) Abstract :
ABSTRACT OF THE INVENTION The present invention relates to an automated, sensor-integrated physiotherapy instrument designed to deliver precise and repeatable rehabilitative limb movements without continuous human supervision. The system employs a motorized actuator assembly comprising a linear actuator and servo-controlled mechanisms capable of performing lifting, rotation, flexion, and extension of the patient's limb. An Arduino Nano microcontroller functions as the central control unit, processing real-time feedback from load cells, IMU sensors, rotary encoders, and pressure or strain sensors to regulate movement through a closed-loop motion control algorithm. The device incorporates adaptive therapeutic routines, resistance detection logic, and automatic safety shut-off upon sensing abnormal force, irregular posture, or patient discomfort. loT connectivity via Wi-Fi/BIuetooth enables remote monitoring, storage of therapy logs, and clinician-directed adjustments through a secure cloud interface. The system further includes a user interface for selecting therapy mode, movement range, speed, and repetitions. Designed for clinical, home-rehabilitation, and mobile health environments, the invention provides a hygienic, consistent, and data-driven physiotherapy platform that enhances treatment accuracy, safety, and personalized recovery.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121558 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN ECO-FRIENDLY NOVEL APPROACH TO MINIMIZE THE POLLUTION LOAD

(51) International classification	:C12N 9/02, C02F 3/34, C02F 1/72, C02F 103/24, C02F 1/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Swethashree Rajendran
2)Ashmitha Kalairaj
3)Shrinidhi Sureshbabu
4)T. Senthilvelan
5)Dr Ramya Mohan

(57) Abstract :
This invention discloses a green nanobiocatalytic approach for the treatment of syntan-laden wastewater from leather processing industries. A laccase-functionalized titanium dioxide nanozyme (Lac@TiO2), synthesized using crude extracellular laccase derived from Penicillium chrysogenum, was developed for efficient degradation of phenolic (DI) and melamine-based (FB6) syntans. Under optimized conditions, the nanozyme achieved biodegradation efficiencies of up to 96% and 94%, respectively, while substantially lowering the chemical oxygen demand (COD) and total organic carbon (TOC) by more than 80% in both cases. Structural and compositional changes in syntans and detoxification of treated effluents were confirmed through advanced analytical techniques including UV-Vis spectroscopy, FTIR, UPLC, CHNS elemental analysis, and plant-based bioassays. This nanozyme has greater stability than crude laccase, can be reused up to 10 times, and is recyclable. This sustainable and cost-effective process is designed for seamless scalability, addressing the pressing environmental burden of recalcitrant organic pollutants from industrial leather effluents.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121559 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND SYNTHESIS OF LAC@TIO2:A GREEN CATALYST FOR ENVIRONMENTAL REMEDIATION APPLICATIONS

(51) International classification	:C02F1/30, C02F1/70, C02F101/30, C01G23/047, B01J35/39, B01J21/06, B82Y30/00, B82Y40/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Swethashree Rajendran
2)Ashmitha Kalairaj
3)Shrinidhi Sureshbabu
4)T. Senthilvelan
5)Dr Ramya Mohan

(57) Abstract :
This study presents a novel synthesis of Lac@TiO2, where a mimic laccase enzyme was successfully immobilized on titanium dioxide nanoparticles derived from soybean hull waste. The process was optimized by varying parameters such as TiO2 precursor concentration, enzyme loading, and environmental pH, resulting in significantly enhanced enzyme stability and reusability compared to free laccase. The immobilized enzyme exhibited enhanced resistance to thermal and pH variations, as confinned by DSC and TGA analyses, retaining 62% of its original activity after eight reuse cycles. Comprehensive characterizations revealed the structural and functional advantages of Lac@TiO2. Scanning Electron Microscopy (SEM) confirmed successful enzyme immobilization, and Transmission Electron Microscopy (TEM) elucidated the encapsulated structure of the nanozyme. X-ray Diffraction (XRD) demonstrated reduced crystallinity due to enzyme integration, while X-ray Photoelectron Spectroscopy (XPS) revealed strong interactions between TiO2 and the laccase enzyme, enhancing catalytic stability. Diffuse Reflectance Spectroscopy (DRS) showed a reduced band gap of 2.94 eV for Lac@TiO2, enabling efficient photocatalysis under visible light. This nanozyme achieved significant phenolic degradation, driven CD ��) re Q. CD by improved charge separation and increased reactive site availability. The preliminary test for conducting the degradation process of phenolic syntan, a complex chemical used in the leather industry, using laccase nanozyme has achieved a COD reduction of up to 92% within 4 hours. The CM E o findings highlight Lac@TiO2 as an eco-friendly and cost-effective solution for breaking down o in in CM phenolic aromatic complex compounds commonly found in industrial wastewater from leather, paint, dye, paper, and phamiaceutical manufacturing units, with potential for broader applications in CM o cs oo co o in CM in environmental remediation.

No. of Pages : 6 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121560 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE SMART BACKPACK WITH INTEGRATED AUTOMATIC UMBRELLA

(51) International classification	:A45F 3/04, A45B 11/00, A45C 15/00, A45C 13/30, A45C 13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)V.Dishitha
2)Dr. Irin Loretta
3)Dr Ramya Mohan

(57) Abstract :
The design patent titled "Wearable Smart Backpack with Integrated Automatic Umbrella" features an innovative and functional backpack equipped with an integrated umbrella mechanism, designed to offer users protection from weather elements while maintaining convenience and style. The backpack includes a built-in compartment that houses a retractable umbrella, which automatically deploys with the push of a button, providing immediate coverage during rain or adverse weather. The design emphasizes ergonomic comfort, with adjustable straps and breathable materials for ease of use during extended wear. The streamlined, modern aesthetic ensures the wearable smart backpack remains both practical and fashionable. The backpack also incorporates a power source to operate the automatic umbrella mechanism, as well as potential integration for smart device charging. This unique combination of functionality, weather protection, and wearable technology makes the smart backpack an ideal solution for active individuals seeking versatility and protection on the go.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121561 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HARD WATER SOFTENER FOR IMPROVED WATER QUALITY

(51) International classification	:C02F5/08, C02F9/20, C02F1/42, C02F1/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
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(62) Divisional to Application Number	:NA
Filing Date	:NA

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(72)**Name of Inventor :**
1)laineri Rupesh
2)Dr.Irin Loretta
3)Dr Ramya Mohan

(57) Abstract :
Hard water contains high levels of calcium and magnesium, which can lead to scaling, reduced soap effectiveness, and damage to appliances. A water softener is a device designed to remove these hardness-causing minerals through ion exchange or other technologies. This process improves water quality, making it suitable for domestic and industrial use. Softened water enhances soap lathering, extends the lifespan of plumbing, and reduces energy costs by preventing scale buildup in heaters. Modem softeners may include .smart controls for efficient operation and salt usage. Environmental considerations are also addressed with eco-friendly designs. The system improves both taste and usability of water.Installation can lead to long-term cost savings and health benefits. This paper discusses the working, benefits, and advancements in hard water softeners for improved water quality.n

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121562 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MELODY MILK BOTTLE

(51) International classification	:A61J 17/00, A61J 9/00, A61J 9/02, A61J 11/04, A61J 11/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Pamidi Narendra
2)Dr.Irin Loretta
3)Dr Ramya Mohan

(57) Abstract :
Addressing the challenges faced by parents during feeding routines—especially when managing a crying baby while multitasking—the Melody Milk Bottle offers a breakthrough in baby care technology. This smart bottle plays soothing rhymes automatically when placed on its specialized holder and detects baby cries using a sound sensor. The integrated system comforts babies with music, reducing parental stress and promoting a more peaceful feeding experience. Activated only when the bottle is placed on the holder and the baby cries for a certain duration (approximately 10 seconds), the bottle becomes an intelligent, hands-free assistant. Designed with safety, hygiene, and ease-of-use in mind, the product incorporates a rechargeable battery, a washable design, and the ability to upload new rhymes via an SD card module. By blending music therapy with smart automation, the Melody Milk Bottle enhances the feeding routine, calms infants, and supports busy caregivers—all in one compact, tech-savvy solution

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121563 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ANTICANCER POTENTIAL OF LUPEOL:MECHANISMS OF ACTION AND THERAPEUTIC APPLICATIONS

(51) International classification	:A61P 35/00, A61K 31/58, A61P 35/04, A61K 31/56, A61K 31/575
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr Ramya Mohan

(57) Abstract :
In the present invention, the invention relates to the anti-cancer therapies of lupeol, a naturally occurring triterpenoid, against cancer. The invention introduces molecular mechanisms of lupeol, its upregulation of the apoptotic pathway, downregulation of oncogenic signal cascades (the cascades of the PI3K/Akt, Wnt-bcta-catenin and NF-kappa B), and its inhibition of metastasis and angiogenesis. The present patent furnishes also novel pharmaceutical compositions containing lupeol used alone or in combination with other anticancer agents, with improved therapeutic activities against cancer; such as prostate, breast, colon and pancreatic cancer.e

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121564 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CHITOSAN BASED NANOPARTICLES FOR TARGETED DRUG DELIVERY AND CONTROLLED RELEASE SYSTEMS

(51) International classification	:A61K31/722, A61K9/00, B82Y5/00, B82Y30/00, B82Y40/00, A61K9/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. R, Susmitha

(57) Abstract :
The present invention is a synthesis of a nanoparticle system of chitosan that is intended to deliver a drug to a particular site and release a medicinal substance at the appropriate place thereof. The nanoparticles are produced by the ionic gelation method using crosslinker tripolyphosphate that allows high levels of drug entrapment efficiency and stability due to the biocompatible and biodegradable properties of the chitosan. Included targets are also augmented with targeting ligands, such as folic acid, antibodies, or peptides leading to increased selectivity over diseased tissues, e.g., diseased cancerous or inflamed cells. The system offers sustained and pH-responsive release of the drugs that gives low-systemic-side-effect and enhances therapeutic performance in a variety of settings and conditions including cancer therapies, infectious diseases, as well as chronic disease��VSSm�@���
No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121575 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENHANCING NAPKIN INCINERATOR WITH ACTIVATED CARBON FILTER

(51) International classification	:F23G 5/16, F23G 5/00, F23G 7/06, F23G 5/50, F23J 15/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
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2)J.AASHIQAH
3)M.SUGIRTHI
4)K.BRINDHA

(57) Abstract :
ENHANCING NAPKIN INCINERATOR WITH ACTIVATED CARBON FILTER The invention relates to an incinerator specifically designed for the safe and environmentally responsible disposal of sanitary napkins and similar absorbent waste. The system comprises a primary combustion chamber for controlled burning of the waste, a secondary afterburner chamber for high-temperature oxidation of unburned gases, and a particulate filtration unit for capturing ash and fine particulates. Downstream ot these combustion stages, an activated carbon adsorption module is provided to remove volatile organic compounds, odour-causing gases, and hazardous pollutants from the exhaust stream. The incinerator further includes an induced-draft airflow system and an electronic control unit for regulating temperature, airflow, and pressure drop, ensuring complete combustion and minimized emissions. By integrating thermal oxidation with activated-carbon filtration, the invention significantly reduces air pollution and odour, providing a compact, efficient, and low-emission solution for sanitary napkin waste disposal in households, clinics, schools, and community facilities.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121586 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI ENHANCED REMOTE SENSING SYSTEM FOR REAL-TIME ENVIRONMENTAL MONITORING AND DISASTER ANALYSIS

(51) International classification	:G06N 20/00, G06Q 50/26, G08B 21/10, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)P. Kamaleshwran
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(57) Abstract :
ABSTRACT AI-ENHANCED REMOTE SENSING SYSTEM FOR REAL-TIME ENVIRONMENTAL MONITORING AND DISASTER ANALYSIS Frequent and severe environmental hazards such as floods, wildfires, and .earthquakes demand advanced systems that can deliver timely insights for monitoring and disaster response. Existing research has highlighted the value of hybrid machine learning models that combine geospatial information, predictive analytics, and automated data processing for improving disaster management. However, many approaches still struggle with real-time data integration, imbalanced datasets, and the fusion of heterogeneous information sources. CD ��) re Q. CD This study proposes an Al-enhanced remote sensing system for real-time environmental monitoring and disaster analysis. The framework integrates multisource inputs, including satellite imagery, UAV data, sensor networks, and social media streams, into a unified processing pipeline. Deep learning architectures such as convolutional neural networks are employed for spatial and image-based feature extraction, while transforrher-based models and ensemble methods. including XGBoost and gradient boosting.are applied for classification and * prediction tasks. To address key challenges such as missing values and uneven class distributions, the system incorporates advanced preprocessing and oversampling techniques. CM E o CD CO ! CM in CM o cs s ion CM in CoM CMI Or-, CD?" QI Tf o - - The proposed approach aims to (i) detect environmental anomalies as they occur, (ii) generate high-resolution disaster impact maps using remote sensing data, and (iii) provide predictive forecasts to support early warnings and optimize emergency response. By building on recent advances in Al-geospatial modeling, automated coordination frameworks, and hybrid predictive models, this work offers a scalable solution to strengthen situational awareness and decision-making in disaster management.s fl

No. of Pages : 10 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121600 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HARNESSING MACHINE LEARNING TECHNIQUES FOR ACCURATE OF SOLAR POWER GENERATION AND RADIATION CONSUMPT

(51) International classification	:G06N 20/00, H02J 3/38, G06Q 50/06, G06Q 10/04, G01W 1/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Yuvasree P
2)KiranKumar S
3)Lakshmi B
4)Dr. T. Saravanan
5)Dr. S. SENTHIL KUMAR

(57) Abstract :
HARNESSING MACHINE LEARNING TECHNIQUES FOR ACCURATE OF SOLAR POWER GENERATION AND RADIATION CONSUMPTION The efficient integration of solar energy into the power grid requires accurate regression of solar power generation and radiation levels. This work explores the development of "Solar Intelligence" - a system utilizing machine learning-based predictive models.- These models will be trained on a multitude of data sources, including historical solar radiation measurements, weather forecasts, and environmental factors. By analysing these complex relationships, Solar Intelligence aims to predict future solar power generation and radiation with high accuracy. This improved forecasting capability will empower grid operators to optimize energy production, integrate renewable sources seamlessly, and enhance overall grid stability. Furthermore, this "Solar Intelligence" system has the potential to revolutionize solar energy management for utilities and individual consumers, enabling informed decision-making and maximizing the utilization of this clean and sustainable energy I source. Keywords: Solar Energy, Machine Learning, Predictive Models, Power, Generation, Solar Kadi at ion1DE-9D20-8

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121620 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CRISIS PREDICTION:INTEGRATING NLP AND TIME SERIES MODELS FOR ECONOMIC FORECASTING

(51) International classification	:G06Q 40/00, G06Q 40/06, G06Q 40/04, G06N 5/02, G06Q 10/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
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3)T. Sriaruna Kameshwaran
4)Dr. T. SARAVANAN
5)Dr. S. SENTHIL KUMAR

(57) Abstract :
CRISIS PREDICTION: INTEGRATING NLP AND TIME SERIES MODELS FOR ECONOMIC FORECASTING Economic crises pose a significant risk to financial stability, which is why early and accurate detection is essential. This study presents a hybrid approach that combines language models with traditional time series methods to improve the ability to predict such crises. The language models are used to gather sentiment and hidden risk indicators from financial news, policy files, and market reports, while time series methods like ARIMA and Exponential Smoothing analyze structured economic data such as GDP, inflation rates, and stock market indexes. The entire framework is built using Python, making it both easy to understand and effective in its predictions. A comparison of different methods shows that using both written information and numerical data leads to more reliable forecasts, providing a useful tool for identifying potential crises and supporting better economic decisions. CD ��) re 0. CD Keyword: Economic crises, Financial stability, Hybrid approach, Language models. Time series methods, ARIMA, Exponential Smoothing, Sentiment analysis. Forecasting, Crisis prediction

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121624 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MECHANICAL; BEHAVIOUR ANALYSIS OF THERMOSETTING COMPOSITES REINFORCED WITH BANANA FIBER/FLY ASH

(51) International classification	:C08L 97/02, C08L 67/04, C08J 5/04, C08K 7/02, C08L 101/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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3)D.DHANUSH RAJ
4)Dr. S.ARAVINDH

(57) Abstract :
MECHANICAL BEHAVIOUR ANALYSIS OF THERMOSETTING COMPOSITES REINFORCED WITH BANANA FIBER! FLY ASH Banana fibre, derived from the stem of banana tree, is a biodegradable and renewable natural resource. Its incorporation into composite materials enhances lightweight characteristics and durability, aligning with the global emphasis on sustainable and efficient design. This research explores the potential of banana fibre reinforced with filler in thermosetting polymer composites, targeting improved performance in engineering applications such as switches and enclosures. The mechanical properties of banana fibre and filler provide a foundation for developing advanced eco-ffiendly composites. A novel investigation is carried out to study the reinforcement effects of banana fibre and filler in thermosetting polymer matrices. Response Surface Methodology using Box-Behnken Design is employed to analyse key mechanical properties such as ﷺtensile strength, impact strength and flexural strengthﷺ. This study contributes to the advancement of sustainable composite materials with potential international research impact. c I
Keywords: Banana fiber, Sodium Hydroxide, Filler, Thermosetting, Box-Behnken Design963}

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121625 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ANALYSIS OF THE THERMAL PERFORMANCE OF ALUMINIUM NANOFLUID USING PARALLEL AND COUNTER FLOW HEAT EXCHANGERS

(51) International classification	:G01N 25/20, G01N 25/18, G01N 25/48, G01N 25/00, C01F 7/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)P.Aswin Vishva raj
4)A.Monish kumar
5)Dr. K. Kumararaja
(72)**Name of Inventor :**
1)M.Karthikeyan
2)P.Aswin Vishva raj
3)A.Monish kumar
4)Dr. K. Kumararaja

(57) Abstract :
ANALYSIS OF THE THERMAL PERFORMANCE OF ALUMINIUM NANOFLUID USING PARALLEL AND COUNTER FLOW HEAT EXCHANGERS Utilizing aluminium oxide (AI2O3) nanofluids as the medium using in parallel and counter flow heat exchangers to analysis the thermal performance. The nanofluid is created by suspending nanometer-sized particles of aluminium oxide in a base fluid, like de-ionized water, to greatly enhance the thermophysical properties of the fluid, like thermal conductivity and overall heat transfer coefficient. This is used to enhance the heat exchanger efficiency compared to using base fluids (distilled water) as medium. The experiment helps to analysis thermal performance of aluminium oxide in the flow arrangements (parallel & counter flow) with different inlet temperature. Heat transfer efficiency is improved over the base fluid when the overall heat transfer coefficient is calculated in both flow configurations. The findings show that aluminium oxide nanofluids provide a viable solution to optimal performance, applicable for industrial applications demanding increased heat transfer performance.f

No. of Pages : 7 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121629 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MULTI LAYERED ENSEMBLE APPROACH TO REVEAL RACIAL UNDERTONES IN PUBLIC DISCOURSE(BIASBLOOM)

(51) International classification	:H04L 12/58, G06Q 50/00, G06F 17/30, H04L 12/18, G10L 15/26	(71)**Name of Applicant :** **1)NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY** Address of Applicant :NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS), SANTHOSAPURAM, CHENNAI, TAMIL NADU, INDIA-600073 Tamil Nadu India **2)Dharani S** **3)Aishwarya A** **4)Lakshmi B**
(31) Priority Document No	:NA	**5)Dr. T. Saravanan**
(32) Priority Date	:NA	**6)Dr. S. SENTHIL KUMAR**
(33) Name of priority country	:NA	(72)**Name of Inventor :**
(86) International Application No	:NA	**1)Dharani S**
Filing Date	:NA	**2)Aishwarya A**
(87) International Publication No	: NA	**3)Lakshmi B**
(61) Patent of Addition to Application Number	:NA	**4)Dr. T. SARAVANAN**
Filing Date	:NA	**5)Dr. S. SENTHIL KUMAR**
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
A Multi-Layered Ensemble Approach to Reveal Racial Undertones in Public Discourse(BiasBloom). Social media has changed the way people around the world communicate, but it's also become a place where hidden biases spread without people even realizing it. Unlike direct hate speech, which can often be caught by checking for offensive words, these subtle prejudices show up in things like sarcasm, stereotypes, colorism, and sexism. It's hard to catch these kinds of biases using old methods, which is why there's a need for a better and more open solution that can find both obvious and hidden bias in online chats. To du diis, we creaied BiasBloom, a framework that uses several different techniques together. It combines machine learning methods like TF-IDF with XGBoost, rule-based checks, sentiment analysis, and explainable AL This system sorts text into categories like Neutral, Mild, Moderate, or Severe, giving more detailed results than just yes or no. It also uses a sentiment analyzer based on VADER to understand the emotional tone, and an explainability feature that gives clear reasons for each result, making the whole process transparent and fair. BiasBloom works with both real-time and batch analysis of tweets and includes tools like confidence bars and heatmaps, along with organized logs for ongoing checks. CD O re Q- CD The flexible design of BiasBloom makes it useful in many areas, like policy studies, fairness checks, and managing digital spaces. CM E o o CM (D CM By mixing accurate predictions with explanations that consider social values, the framework builds trust in automated systems and helps create ethical AL It can also scale easily, making it suitable for use on big social media platforms. In the end, BiasBloom improves bias detection by mixing strong technical methods with a sense of social responsibility, helping to create safer and more inclusive online spaces. in CM o cs p: o CD CM In CM o CM I o _ CD ; . Q' ⬚ I Tf o Keywords. Bias Detection, Implicit Bias, Racial Undertones, Sarcasm Detection, Colorism, Sexism, Social Media Analytics, Ensemble Learning, TF-IDF, XGBoost, Sentiment Analysis, Explainable Al (XAI), Ethical Al.

No. of Pages : 10 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121640 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ML- DRIVEN THREAT DETECTION FROM SYSMON LOGS: A CYBERSECURITY APPROACH

(51) International classification	:H04L 29/06, G06F 21/55, G06F 21/57, G06F 21/56, H04L 9/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)RAJESH S
4)SACHIN T
5)Dr. N. Kalayana Sundaram
(72)**Name of Inventor :**
1)Venkatesh S
2)RAJESH S
3)Dr. N. Kalayana Sundaram

(57) Abstract :
ABSTRACT ML-Driven Threat Detection from Sysmon Logs: A Cybersecurity Approach System Monitor (Sysmon) is a powerful Windows utility that records detailed system activities, including process creation, file modifications, registry changes, and network connections. These logs provide granular visibility into the behavior of applications and services, making them highly valuable for detecting malicious activity. Traditional security mechanisms often fail to identify new or stealthy attacks, but Sysmon's event logging allows for deep behavioral analysis that goes beyond simple signature-based detection. Leveraging this data provides a strong foundation for building intelligent, proactive threat detection systems. o ��) re 0. CD This project focuses on utilizing Sysmon logs to train machine learning models capable of detecting malware and anomalous system behaviors. By analyzing vast amounts of event log . data, the system extracts rneaningful features such as unusual process hierarchies, abnormal command-line executions, and suspicious network connections. These extracted patterns form the input to machine learning pipelines, enabling the automated identification of threats that may not be visible to conventional antivirus tools. The integration of machine learning makes the detection process more adaptive and capable of handling emerging threats. CM E o o Tf CD CM in CM o o o o in CM Both supervised and unsupervised learning techniques are explored in this work. Supervised models are trained on labeled datasets containing both benign and malicious activities, making them highly effective for identifying known attack signatures. In contrast, unsupervised models learn the underlying patterns of normal behavior, making them suitable for spotting anomalies or previously unseen malware. The dual use of supervised and . unsupervised approaches ensures a comprehensive detection mechanism that balances accuracy with adaptability. This hybrid strategy significantly reduces false positives while enhancing the robustness of the detection framework. m CM o CM I Q-, - -r z: ar t-.c:. Q I Tf o Among the various models tested, the Local Outlier Factor (LOF) algorithm demonstrated the most effective performance in identifying anomalies within Sysmon logs. LOF excels at detecting subtle deviations in data distribution, allowing it to flag suspicious activities that may represent sophisticated or zero-day attacks. The use of LOF enhances the real-time . .* i -1 m detection capability of the system, enabling proactive responses to potential security incidents. Overall, this project highlights the importance of combining Sysmon�fs detailed event monitoring with machine learning to develop a reliable, intelligent, and efficient malware detection system that strengthens cybersecurity defenses. Keywords: Sysmon logs, Machine Learning, Malware Detection, Anomaly Detection, Supervised Learning, Unsupervised Learning, Local Outlier Factor (LOF), Windows Security, Real-time Threat Detection, Cybersecurity,.

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121641 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EYES OF TECHNOLOGY : A SMART AID FOR THE BLIND

(51) International classification	:G09B 21/00, A61H 3/06, G06V 30/10, G10L 15/22, G10L 15/26
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)S.Seethalakshmi

(57) Abstract :
EYES OF TECHNOLOGY: A SMART AID FOR THE BLIND This project introduces an innovative and affordable Smart Glasses system for the visually impaired, developed to deliver real-time scene narration and environmental awareness. The design uses the ESP32-CAM module to capture, live video frames, which are transmitted wirelessly to a computer workstation running OpenCV and deep learning frameworks. The system processes the video stream through multiple vision pipelines, including object detection, scene description, optical character recognition (OCR) for reading signs and printed text, and face recognition for identifying known individuals. The extracted information is then transformed into natural speech output and delivered to the user through a Bluetooth or wired earphone interface. CD ��) re 0. CD The proposed smart glasses emphasize portability, low power consumption, and costeffectiveness by integrating compact hardware, efficient video transmission, and a rechargeable Li-ion battery system. Unlike existing assistive tools, this solution combines low- cost embedded devices with advanced Al models in OpenCV and deep learning frameworks, making it both powerful and accessible. Additional features such as depth estimation, obstacle proximity detection, and personalized user profiles enhance its scope for navigation assistance, safety, and everyday interaction. CM E o By combining affordable loT hardware with OpenCV-based intelligent vision modules, this project provides a practical and scalable assistive technology that improves mobility, independence, and.quality of life for visually impaired individuals in real-world environments

No. of Pages : 10 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121642 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MACHINE LEARNING BASED DETECTION OF ANOMALIES, INTRUSIONS, AND THREATS IN INDUSTRIAL CONTROL SYSTEMS

(51) International classification	:G06N 3/04, H04L 29/06, G06N 3/08, G06F 21/55, H04L 9/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
MACHINE LEARNING: BASED DETECTION OF ANOMALIES,INTRUSIONS,AND THREATS IN INDUSTRIAL CONTROL SYSTEMS Addressing the increasing risks of cyberattacks on Industrial Control Systems (ICS) is the goal of the gMachine Learning-based Anomaly Detection for Programmable Logic Controllers (PLCs)h project. This innovative approach strengthens the cybersecurity of ICS environments, which are widely used in manufacturing, energy, and water management sectors. By simulating real-world cyber threats such as data manipulation, packet injection, communication floods, and protocol exploitation, the project creates a realistic dataset combining both normal and malicious traffic. Using this dataset, different Machine Learning algorithms including 1D Convolutional Neural Networks (CNN), Long Short-Term Memory (LSTM), Support Vector Machines (SVM), and Isolation Forest are trained and evaluated for anomaly detection. CD) re 0. CD CM E o The proposed system continuously monitors communication between PLCs and identifies abnormal patterns in real-time, thereby preventing intrusions before they cause operational damage. The use of GPS-like logging of network activity and packet-level analysis ensures accurate detection of suspicious behavior. Among the tested methods, ID CNN achieved superior accuracy, recall, and Fl-score, making it the most suitable model for deployment in real-world ICS environments. CM Tf CD CM in CM o cs o o o in CM This project not only enhances the resilience of industrial infrastructures but also reduces downtime and increases reliability in critical operations. By combining anomaly detection, real-time monitoring, and proactive response, this Machine Learning-based system provides a scalable and efficient cybersecurity solution for Industry 4.0. L Keywords: Industrial Control Systems, PLC Security, Machine Learning, Anomaly Detection, Cybersecurity.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202541121643 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EYES OF TECHNOLOGY : SECURE AND PREDICTIVE AND HEALTHCARE DATA MANAGEMENT FRAMEWORK USING BLOCKCHAIN

(51) International classification	:G16H 10/60, H04L 9/06, H04L 9/32, G06F 16/23, G06F 21/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SECURE AND PREDICTIVE HEALTHCARE DATA MANAGEMENT FRAMEWORK USING BLOCKCHAIN % Healthcare systems today generate various amounts of sensitive patient data from electronic health records (EHRs), diagnostic devices, and wearable sensors. Ensuring data security, integrity, interoperability, and timely access remains a major challenge due to issues such as centralized storage vulnerabilities, unauthorized access, and lack of predictive decision support. To address these challenges, this paper proposes a gSecure and Predictive Healthcare Data Management Framework using Blockchainh technology. The framework using blockchainfs decentralized, immutable, and transparent ledger to securely store and manage patient health records, ensuring tamper-proof access control and auditability. Smart contracts are employed to automate data sharing policies between stakeholders such as hospitals, laboratories, insurers, and patients, thereby reducing administrative overhead and eliminating the need for intermediaries. To enhance predictive capabilities, the framework integrates machine learning models with real-time patient data to forecast health risks, detect disease, and support future decisions. CD) CQ Q. CD By combining blockchain with predictive analytics, the framework ensures not only trustworthy data management but also support early prediction, the way for more efficient, secure, and patient-centric healthcare ecosystem. CM EP co Tf CD CM 40 CM O oo a 40 CM Keywords .Blockchain, Healthcare Data Management, Predictive Analytics, Security.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121644 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INDUSTRIAL SAFETY MONITORING USING XG BOOST DECISION TREE MODEL

(51) International classification	:G06K 9/62, G06N 20/00, G06K 9/00, G05B 23/02, G05B 19/418
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT INDUSTRIAL SAFETY MONITORING SYSTEM USING XGBOOSTDECISIONJTREE MODEL. The 'Industrial Safety Monitoring System Using XG Boost Decision Tree Model" is designed to tackle the increasing risks of workplace hazards and industrial accidents by introducing an advanced safety monitoring approach. The system integrates machine vision with intelligent machine learning techniques to recognize unsafe worker behaviour, machinery misuse, and hazardous events in real time. Unlike traditional inspections or simple sensorbased methods, this model applies Decision Tree and XG Boost algorithms to i accurately classify safety violations,.thereby minimizing the possibility of human error. CD ��) (C Q. 0) P E o Tf Tf CD Through CCTV/IP cameras, the system continuously observes industrial environments, capturing live footage and detecting abnormal activities. Whenever a violation is identified, loT-enabled communication modules issue immediate alerts to supervisors or safety officers, allowing quick response. To manage data effectively, the system records unsafe events in high resolution for investigation purposes while compressing routine activities to save storage space. By combining real-time surveillance, intelligent detection, and automated alerting, this project enhances workplace safety and reduces dependence on manual monitoring. It offers a reliable, efficient, and scalable solution to protect workers and ensure operational continuity in large-scale industries. Keywords: Industrial Safety, Machine Vision, XG Boost, Real-time Monitoring.

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(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121645 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : STRESS RECOGNITION USING DEEP LEARNING ON MULTIMODAL PHYSIOLOGICAL DATA

(51) International classification	:A61B 5/00, A61B 5/16, A61B 5/374, A61B 5/372, A61B 5/0476
(31) Priority Document No	:NA
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(57) Abstract :
ABSTRACT STRESS RECOGNITION USING DEEP LEARNING ON MULTIMODAL PHYSIOLOGICL DATA Accurate detection of stress is essential for effective mental health monitoring and early intervention, as prolonged stress has profound implications for both psychological stability and physiological health. This work investigates advanced deep learning techniques for stress classification by leveraging multimodal physiological data, with a primary focus on electroencephalogram (EEG) signals. Stress-related responses were recorded through a set of biosensors, and the raw signals were pre-processed to extract discriminative features such as heart rate variability, skin conductance, and EEG spectral components. These features were utilized as input for deep learning frameworks, specifically Convolutional Neural Networks (CNNs) and Long Short-Term Memory (LSTM) networks, which are capable of capturing both spatial and temporal dynamics inherent in stress-related patterns. 0) ��) re 0. CD Experimental evaluations revealed that CNN models trained on EEG spectrograms significantly outperformed conventional machine learning classifiers, thereby emphasizing the superiority of deep learning in EEG-based stress recognition. Moreover, the integration of multimodal physiological data.combining EEG with complementary signals.yielded a substantial improvement in detection accuracy, underscoring the advantage of adopting a holistic approach over single-signal analysis. I I I I CM E o in Tf CD CM in CM o o o o in CM I The findings suggest that deep learning-driven stress recognition systems, particularly those employing multiscale analysis (MA)-enhanced CNN and LSTM architectures, provide a robust and scalable solution for real-time monitoring. Such frameworks hold strong potential for deployment in healthcare settings and wearable technologies, enabling personalized mental health support and proactive stress management. This research highlights the transformative role of artificial intelligence in advancing digital health solutions and lays the foundation for next-generation stress detection and monitoring systems. I I J Keywords . Stress detection, EEG, Deep learning, CNN, LSTM, Multimodal data, Mental health monitoring

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121646 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SMART IOT -EEG BASED APPROACH DETECTION AND MENTAL WELLNESS SUPPORT

(51) International classification	:A61B 5/00, A61B 5/374, A61B 5/0476, A61B 5/16, A61B 5/372	(71)**Name of Applicant :** **1)NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY** Address of Applicant :NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY(AUTONOMOUS), SANTHOSAPURAM, CHENNAI, TAMIL NADU, INDIA-600073 Tamil Nadu India **2)Janani P** **3)MONICA Y** **4)Pavithra R** **5)Kavithamani B**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	(72)**Name of Inventor :**
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(86) International Application No	:NA	**2)MONICA Y**
Filing Date	:NA	**3)Pavithra R**
(87) International Publication No	: NA	**4)Kavithamani B**
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
SMART lOT-EEG BASED APPROACH DETECTION AND MENTAL WELLNESS SUPPORT Sleep health is directly linked to mental wellness, and disturbances in sleep are often early indicators of stress, anxiety, or depression. Traditional sleep monitoring methods, such as polysomnography, are expensive, complex, and require clinical supervision. To overcome these limitations, this project introduces a portable and intelligent loT-based system designed for real-time monitoring of sleep states using EEG signals. The system begins with EEG sensors that capture brain activity during sleep. These signals are processed by a NodeMCU microcontroller, which serves as the bridge between the hardware and cloud platform. Data collected is transmitted securely to the ThingSpeak cloud, ensuring continuous storage and accessibility without the need for bulky equipment. CD ��) re 0. CD In the cloud environment, the data is processed using Python-based algorithms. Preprocessing techniques filter out noise and artifacts, while feature extraction identifies meaningful brainwave patterns, such as Delta, Theta, Alpha, and Beta waves. These extracted features are then analyzed using deep learning models like AlexNel and VGG16, which classify sleep stages into Awake, Light Sleep, Deep Sleep, and REM. This enables early detection of irregular sleep patterns that may be linked to mental health issues. CM E o (D (D CM The loT integration allows healthcare professionals to remotely access and monitor patient data, ensuring timely diagnosis and personalized care. Patients can benefit from continuous, home-based monitoring without depending on costly sleep laboratories. This makes the system both cost-effective and scalable, serving the needs of individuals as well as clinical environments. Tf in CM o o o o in CM m CM o CMIo fl) _ OI ' Tf o r r.r. Looking ahead, the system can be enhanced by integrating additional health data such as heart rate and oxygen levels, as well as developing mobile applications for patient dashboards. With these upgrades, the project has the potential to evolve into a comprehensive digital platform for mental health and sleep monitoring. - 1 2 * * In conclusion, this project demonstrates bow loT, EEG signal analysis, and artificial intelligence can come together to create a practical solution for sleep disorder detection and mental wellness support. It provides an accessible and innovative healthcare approach, bridging the gap between traditional clinical methods and modem, technology-driven solutions. ii i Keywords: loT,EEG,Sleep Disorder Detection, Sleep State Classification, Mental Wellness Support,NodeMCU(ESP8266),ThingSpeakCloud,PythonPreprocessing ,FeatureExtracton,Deep Learning Models,AIexNet,VGG16,Remote Monitoring, Cloud Integration ,HealthCare System.

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(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121647 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENCE SYSTEM FOR CYBERBULLYING USING NLP AND ML

(51) International classification	:G06N 20/00, G06Q 50/00, G06F 17/27, G06F 40/30, G06F 40/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT INTELLIGENT SYSTEM FOR CYBERBULLYING USING NLP AND ML Cyberbullying has become a serious concern on social media platforms, causing psychological harm and distress to its victims. While most detection systems focus primarily on English text, they often fail to capture abusive or threatening content expressed in Indian regional languages, especially when written in Roman script. Given the rising trend of multilingual and code-mixed communication online, there is a strong need for intelligent systems that can identify harmful content in diverse linguistic forms. This project presents a cyberbullying detection framework that leverages advanced Natural Language Processing (NLP) and Machine Learning (ML) techniques. The system integrates XLM-RoBERTa for text-based detection in Indian languages typed in Roman script and uses vision models such as VIT and YOLO for image-based analysis. By combining outputs from both modalities through a multimodal fusion approach, the system can effectively detect multiple forms of cyberbullying, including abuse, racism, and threats. Real-time datasets such as MuRIL, HASOC, and Twitter were utilized to train and fine-tune the model for improved accuracy. CD ��) re 0. CD CM E o The proposed system demonstrates significant advantages over traditional methods, including multilingual adaptability, robustness to informal spelling variations, and higher detection performance. With an Fl score greater than 0.80, the model shows promise for real- world deployment in social media moderation. By flagging harmful content and providing actionable insights through a dashboard, this system contributes to creating a safer digital environment for Indian users, particularly in low-resource language contexts. CD CM Keywords: Social Media Safety, Multilingual Protection, Online Abuse Detection.2B

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121648 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REALTIME GENETIC SEQUENCE VERIFICATION WITH DISEASE MAPPING AND POLYMORPHISM

(51) International classification	:C12Q 1/68, G16B 20/20, C12Q 1/6883, G16B 30/10, C12Q 1/6827	(71)**Name of Applicant :** **1)NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY** Address of Applicant :NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY(AUTONOMOUS), SANTHOSAPURAM, CHENNAI, TAMIL NADU, INDIA-600073 Tamil Nadu India **2)T. Kathirvel Balan** **3)A. Sudar Muthu** **4)A. Petchi** **5)Dr. S. Subburam**
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(87) International Publication No	: NA	**4)Dr. S. Subburam**
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
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Filing Date	:NA	

(57) Abstract :
ABSTRACT REALTIME GENETIC SEQUENCE VERIFICATION WITH DISEASE MAPPING AND POLYMORPHISM The rapid progress in genomic research has enabled the identification of gene mutations, polymorphisms, and their associations with various diseases. However, manual testing of genetic sequences remains time-consuming, costly, and prone to human error, making it challenging to detect mutations and predict disease risks effectively. To address this issue, this project proposes the development of a Realtime Genetic Sequence Verification System with Disease Mapping and Polymorphism Analysis, designed to automate the detection of gene abnormalities and provide early disease prediction. 0) ��) 0. CD The proposed system integrates gene expression and mutation data to detect changes in genetic dependency networks. It preprocesses genetic sequences (ATGC), removes outliers, converts them into codons, and applies machine learning models such as Support Vector Machines (SVM) for disease classification and prediction. The system then maps identified polymorphisms to potential diseases and provides drug or diet recommendations for prevention and management. A Big Data framework with Hadoop is employed to handle large-scale genomic datasets efficiently, ensuring both high processing power and distributed storage. CM E u O co. (0 CM The system architecture is divided into three.layers: the Data Access Layer (responsible for dataset management and genetic sequence input), the Business Logic Layer (handling preprocessing, mutation detection, classification, and disease prediction), and the Presentation Layer (responsible for displaying insights, disease outcomes, and recommended treatments). The application not only improves the reliability and speed of genetic testing but also enhances personalized healthcare by offering preventive solutions tailored to an individual�fs genetic makeup. Keywords: Genetic Sequence Verification, Polymorphism, Disease Mapping, Mutation Detection, Support Vector Machine, Big Data, Hadoop, Bioinformatics, Personalized Medicine, Preventive Healthcare.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121649 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PREDICTING ROAD ACCIDENT RISK USING GOOGLE MAP IMAGES AND CONVOLUTIONAL NEURAL NETWORK (CNN)

(51) International classification	:G06N 3/04, G06N 3/08, G08G 1/01, G06V 10/764, G06K 9/00
(31) Priority Document No	:NA
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(57) Abstract :
ABSTRACT ROAD ACCIDENT RISK PREDICTION USING GOOGLE MAP IMAGES AND A CONVOLUTIONAL NEURAL NETWORKS (CNN) Addressing the rising concern of road accidents and public safety, the goal of the gRoad Accident Risk Prediction using Deep Learning and Google Maps Imagery h project is to provide a proactive solution for identifying accident-prone areas. This innovative system integrates Convolutional Neural Networks (CNN) with satellite and street-view imagery from Google Maps to predict accident risk levels in real-time. By correlating geolocated road images with historical accident data, the model learns visual risk factors such as road design, lighting conditions, traffic density, and visibility. The application enables users to input a location or drop a pin on a map interface, instantly receiving color-coded risk predictions (Lo\y, Medium, High). In addition to assisting daily commuters in selecting safer routes, the system aids traffic authorities by highlighting high-risk zones for proactive accident prevention and urban planning The model employs preprocessing techniques.resizing, nonnalization, and augmentation.to improve prediction accuracy and generalization. CD) re Q. CD CM E o To further enhance its functionality, the system is designed for real-time integration with a user-friendly dashboard and alert system. It not only informs users about potential risks but also provides authorities with actionable insights for traffic management and safety monitoring. Future expansions may include the incorporation of live traffic feeds, weather data, and loT-based sensors for more comprehensive risk assessment. By combining deep learning, geospatial analysis, and interactive visualization, this project contributes to reducing road accident risks and fostering safer navigation experiences, ultimately improving public road safety. Tf m F CM : O cs; O O O in CM Keywords: Road Safety, Accident Risk Prediction, Deep Learning, CNN, Google Maps, Smart Transportation.N

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121664 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE NETWORK ATTACK DETECTION THROUGH NETFLOW FEATURE ANALYSIS AND MACHINE LEARNING

(51) International classification	:H04L 29/06, G06N 20/00, G06F 21/55, H04L 12/26, H04L 9/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ADAPTIVE NETWORK ATTACK DETECTION THROUGH NETFLOW FEATURE ANALYSIS AND MACHINE LEARNING
Abstract: I I In today’s digital world, cybersecurity threats are growing quickly, making it very important to protect network systems. Traditional systems that use set rules for detecting intrusions often have trouble keeping up with new and complex types of attacks. This project introduces a new system that uses Al and machine learning to detect network attacks. It uses NetFlow data, which collects information about network traffic like the source and destination IP addresses, ports, packet counts, and how long a connection lasts. By looking at this data, the system can spot unusual activity and tell the difference between normal and harmful behaviour. This method improves the accuracy of detecting threats and helps the system learn and change over time to predict attacks. The goal is to make networks safer, lower the chance of security breaches, and help organizations better protect their systems through smart intrusion detection. CD) re 0. CD Keywords: Predictive modelling, Network security, Artificial intelligence. Threat detection, Cybersecurity, Machine learning, Anomaly detection, Predictive analytics, Network traffic analysis, Cyber threats.

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(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121669 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TWIN OPTIX AN EDGE AI ENABLED IOT DIGITAL TWIN FRAMEWORK FOR REAL TIME PREDICTIVE ANALYTICS AND AUTONOMOUS OPTIMIZATION OF SMART ASSETS

(51) International classification	:G06N 3/08, G06N 3/04, G06N 20/00, G06N 5/04, G05B 13/04
(31) Priority Document No	:NA
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(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Abstract CD ��) re Q. CD The rapid evolution of Industrial loT (IIoT) and Edge-AI technologies has enabled realtime insights into complex cyber-physical systems, yet traditional monitoring architectures still face challenges in predictive accuracy, testing flexibility, and optimization feedback. This Patent introduces Twin Optix, an Edge-IoT Digital Twin Framework designed for predictive testing, realtime synchronization, and operational optimization of smart assets.In the proposed system, physical loT sensors capture live environmental and operational parameters such as temperature, vibration, flow, and soil moisture. The data are processed locally by an Edge-AI Jetson device, which performs preprocessing, anomaly detection, and preliminary inference using optimized deep learning models. Simultaneously, a cloud-hosted Digital Twin mirrors the physical system in real time, enabling high-fidelity '�ewhat-if* simulations, stress testing, and Al-driven optimization modeling. The twin evaluates multiple operational scenarios virtually, determining the most efficient configuration before sending adaptive control commands back to the edge for implementation. This bi-directional Edge-Cloud loop ensures continuous learning, minimizes downtime, and enhances reliability without interrupting real-world operations. Experimental results demonstrate improved predictive accuracy and up to 60% reduction in operational risk through dynamic reconfiguration guided by simulation insights. The proposed Twin Optix architecture represents a scalable, self-optimizing solution for smart agriculture, manufacturing, and infrastructure systems.bridging the gap between digital simulation and autonomous loT operations.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025

(21) Application No.202541121675 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATIC WASTE SEGREGATION DUSTBIN

(51) International classification	:B07C 5/344, G01V 3/11, C22B 7/00, B07C 5/36, B07C 5/34
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(33) Name of priority country	:NA
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(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
ABSTRACT OF THE INVENTION The present invention pertains to a smart system for segi'egating and measuring metallic waste, capable of automatically detecting, separating, and quantifying metal materials from a mixed waste stream. The system includes a waste input section, a metal detection sensor, a microcontroller, a motorized or servo-controlled separation mechanism, a measurement module, and a display or loT- enabled communication unit. Metallic items are identified based on their electrical conductivity and magnetic characteristics, and the microcontroller operates the separation mechanism in real time to direct metals into a designated collection container while diverting non-metallic waste to a separate compartment. The measurement module determines the weight or volume of the collected metals, and the resulting data is either displayed locally or transmitted wirelessly for remote monitoring. The system is powered by a DC supply and features a compact, coiTOsion-resistant design, making it suitable for domestic, industrial, and municipal applications, and enabling automated, efficient, and safe waste management while enhancing recycling and resource recovery.

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(19) INDIA
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(21) Application No.202541121676 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SURFACE ENHANCED RAMAN SPECTROSCOPY BASED BIOSENSOR USING IN-SITU GROWN PLASMONIC SILVER NANOSTRUCTURES ON CARBONACEOUS SUPPORT FOR DIAGNOSIS OF PROSTATE CANCER

(51) International classification	:G01N 21/65, G01N 33/574, G01J 3/44, G01N 33/543, G01N 33/53
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Title:SURFACE ENHANCED RAMAN SPECTROSCOPY BASED BIOSENSOR USING IN-SITU GROWN PLASMONIC SILVER NANOSTRUCTURES ON CARBONACEOUS SUPPORT FOR DIAGNOSIS OF PROSTATE CANCER Abstract: cs E o Prostate cancer is one of the most common cancers among men, with current diagnostic methods, such as prostate-specific antigen (PSA) testing, lacking specificity and often resulting in unnecessary biopsies. Sarcosine, a urinary metabolite linked to prostate cancer progression, has emerged as a promising non-invasive biomarker for early detection. In this study, we present the developrnent of a novel Surface Enhanced Raman Spectroscopy (SERS)-based biosensor using in-situ grown plasmonic silver nanoparticles anchored on carbonized rice straw as a stable and highly sensitive substrate. The rice straw was carbonized at 600C to improve its crystallinity, chemically activated, and decorated with silver nanoparticles through a sodium borohydride reduction process, creating dense plasmonic "hot spots" for signal enhancement. The Ag@CRS substrates were characterized for their SERS performance using Rhodamine 6G as a probe molecule, demonstrating strong and reproducible signal enhancement across a broad concentration range. The biosensor was then optimized for label-free detection of sarcosine in standard aqueous solutions and validated with urine samples from healthy individuals, benign prostatic hyperplasia (BPH) patients, and prostate cancer patients. The sensor demonstrated high sensitivity, selectivity, and stability, enabling rapid molecular fingerprinting without the need for photobleaching or sample pre-treatmenl. This platform offers a cost-effective, eco-friendly, and non-invasive method for prostate cancer diagnosis, with the potential for clinical application and point-of-care screening778B5-403C-4

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121703 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : RESUSYNC-AI-POWERED RESUME OPTIMIZATION PLATFORM

(51) International classification	:G06Q 10/10, G06Q 10/06, G06N 20/00, G06Q 10/00, G06F 16/332
(31) Priority Document No	:NA
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(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)ARUN KUMAR SUKDEV CHAVAN
4)TEJASWINI G

(57) Abstract :
ABSTRACT Building a resume that can successfully make it through the applicant tracking system and catch the recruiter's attention is a big, daunting task for any job seeker in today's competitive job market. The traditional creation process of resumes lacks insights into ATS compatibility, keyword optimization, and industry-specific requirements, which leads to missed opportunities and prolongs the job search. To address these highly critical challenges, ResuSync introduces an innovative Al-powered resume optimization platform that bridges the gap between job seekers and modern recruitment systems by applying advanced techniques of natural language processing and machine learning. It offers intelligent resume analysis, personalized optimization suggestions, and automated generation of tailored resumes a_nd cover Jetters thaX^help users improve their employability significantly by making data-driven enhancements to their resumes. CD ��) re 0. CD The ResuSync platform is built upon a robust MERN stack architecture: MongoDB, Express.]s, React.js, and Node.js, integrated with a custom-developed Local Al engine for data privacy and offline processing. It utilizes sophisticated NLP algorithms for resume parsing and content analysis, leveraging a dataset comprising 80+ IT job roles from multiple domains, including Software Development, Data Science, Cloud Computing, and Cybersecurity. This Al engine uses a 4-criteria ATS scoring system that evaluates the quality of content, matching keywords, format structure, and skills alignment to provide users with actionable insights and quantifiable improvement metrics. This platform features Google OAuth 2.0 authentication, professional Enhancv-inspired user interface design, real-time PDF generation with Puppeteer, and advanced file processing, which supports multiple document formats, including PDF, DOC, and TXT files. I I i CM E o CO o CM in CM o 5C5D O (D CM Extensive testing and evaluation prove that ResuSync yields excellent performance metrics, including up to 79.2% in ATS compatibility scores, 75.5% in resume improvement accuracy, and 78.8% in PDF generation success rates. Its privacy-first approach to local Al processing without the use of third-party APIs guarantees full data security while maintaining superior quality and speed of processing. Advanced software engineering principles are applied in this implementation: scalable architecture design, comprehensive error handling, responsive web development, and professional authentication systems. ResuSync is a significant contribution to innovation in HR technology, as it showcases how Al-powered solutions can change traditional recruitment processes and help modern active job seekers with intelligent, accessible, and effective tools for career advancement in the new digital employment landscape.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121705 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ISOLAX: CLOUD-DRIVEN END POINT ISOLATION AND SECURITY AUTOMATION

(51) International classification	:H04L 29/06, G06F 21/55, G06F 21/57, H04L 12/24, H04L 9/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT The present invention is directed to the enhancement of cybersecurity incident response through the introduction of a cloud-driven endpoint monitoring and isolation system that offers real-time visibility, remote control, and automated containment of compromised computing devices. The described system, ISOLAX, comprises a lightweight endpoint agent and a centralized command-and-control server that can continuously execute screen streaming, remote shell operations, process interrogation, file system .exploration,_and. selective .network_.ispj.atton.._IJLsjmplifLes the traditional JEjidpoint Detection and Response (EDR) platforms by removing latency, hardware dependency, and operational complexity through a highly scalable, cross-platform, and resource-efficient architecture. CD ��) re 0. CD The ISOLAX system utilizes a unique, hybrid communication mechanism whereby each endpoint initiates secure, periodic polling for commands while maintaining the capability to transmit live telemetry such as screen frames, system metadata, and process information. A critical aspect of this invention is the network isolation without severing the control channel, provided by the automation of OS-native firewall rules enforcement. By doing so, this enables analysts to perform threat investigation, command execution, and forensic data retrieval even when an endpoint is in a fully isolated state from external networks. CM E . o in o CM Tf in CM o o O CD CM The invention supports multi-endpoint orchestration, secure data logging, and detailed action auditing, making it suitable for enterprise SOC environments, academic cybersecurity laboratories, and remote digital forensics. Through its compact agent design, secure server APIj and real-time operational dashboard, ISOLAX provides a robust, cost-effective, and technically advanced mechanism for responding to active security threats while ensuring analyst oversight, endpoint integrity, and operational continuity.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121707 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYBRID NAVIGATION FRAMEWORK FOR OBJECT IDENTIFICATION AND PATH PLANNING IN AUTONOMOUS VEHICLE

(51) International classification	:G05D 1/02, G01C 21/34, G05D 1/00, G01C 21/36, G08G 1/0968
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)M. Dhanalakshmi
3)S. Jeyanthi
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(57) Abstract :
HYBRID NAVIGATION FRAMEWORK FOR OBJECT IDENTIFICATION AND PATH PLANNING IN AUTOMONOUS VEHICLE The "Hybrid Navigation Framework for Object Identification and Path Planning in Autonomous Vehicle" project focuses on solving challenges in autonomous driving in unpredictable and unstructured traffic situations. Unlike traditional road systems designed for lane-based driving, many urban roads in developing countries have unclear markings and are shared by various types of traffic, including pedestrians, cyclists, motorbikes, buildings, . . traffic signals, nearby vehicles, trees, animals, and irregularly shaped vehicles. This project introduces an intelligent, AI-based hybrid navigation framework tailored for object detection and path pianning in autonomous vehicles. It combines deep learning, sensor fusion, and hybrid path planning techniques to handle these complex and changing conditions effectively, The system uses a multi-sensor setup, including cameras, LiDAR, radar, GPS, and IMU, to gather environmental data. Deep learning models such as YOL0v8, DETR, and ViT-based networks are used for realtime object and road feature recognition. For navigation, the system employs a hybrid planning approach that blends RRT* for global path routing with the Dynamic Window Approach (DWA) for local obstacle avoidance, supported by Monte Carlo Localization for accurate positioning. The system also features V2X communication (HetVNETs) for improved traffic awareness and Explainable AI (XAI) to offer clear and transparent decisionmaking through a Human-Machine Interface (HMI). By combining real-time object detection, adaptive planning, and predictive modeling, the system ensures safer and more proactive behavior in high-variability traffic scenarios. It supports scalable and intelligent mobility solutions for environments that are complex, datascarce, or poorly structured.
Keywords: Autonomous Vehicle, Unstructured Roads, Deep Learning, Hybrid Path Planning, V2X Communication, XAI
No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121717 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PROACTIVE SAFETY AWARE ROUTE RECOMMENDATION USING VISUO ACOUSTIC APPROACH

(51) International classification	:G01C 21/34, G01C 21/36, G06N 20/00, G08G 1/0968, G08G 1/005	(71)**Name of Applicant :** **1)NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY** Address of Applicant :NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS), SANTHOSAPURAM, CHENNAI, TAMIL NADU, INDIA-600073 Tamil Nadu India **2)P. BANUPRIYA** **3)S. Balakrishnan** **4)S. Jeyanthi**
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(61) Patent of Addition to Application Number	:NA	**4)Dr. T. Saravanan**
Filing Date	:NA	**5)Dr. S. Senthil kumar**
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
PROACTIVE SAFETY-AWARE ROUTE RECOMMENDATION USING VISUO -ACOUSTIC APPROACH Addressing the increasing concerns around women�fs safety, particularly during travel through isolated or poorly lit areas, is the focus of the �gAl-Powered Women Safety Route Guidance and Distress Detection System�h project. This innovative approach integrates artificial intelligence, machine learning, and geospatial technologies to proactively safeguard women during transit. The system suggests the safest routes by analyzing street infrastructure data such as lighting euuditiuris, CCTV presence, and past incident reports, thereby minimizing exposure to unsafe areas, with intuitive color-coded guidance (Safe Route - Green, Low-Risk Route - Yellow, High-Risk Route - Red). CD ��) re Q. CD Beyond preventive route guidance, the system employs advanced audio classification models to detect distress cues such as screams, panic tones, or emergency keywords like �ghelp me�h and �gsave me�h and �gpolice�h. In the event of a detected threat, the system autonomously initiates emergency protocols: it shares live GPS location, establishes a direct call to police authorities, and. uniquely.integrates with government-installed public CCTV cameras in the local area. This enables real-time video footage from nearby surveillance systems to be transmitted directly to police control, centers, strengthening evidence collection and ensuring quicker intervention. CM E o CM By combining route safety intelligence, audio-based distress monitoring, and smart CCTV integration, the project moves beyond existing safety apps that rely solely on manual triggers. The proposed system works discreetly in the background, offering proactive protection, immediate response, and authenticated evidence logging for post-incident analysis. Ultimately, this project not only empowers women with safer navigation choices but also creates a dependable safety net through real-time police collaboration, aiming to make urban mobility more secure, trustworthy, and responsive.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/12/2025
(21) Application No.202541121867 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DC SOLENOID OPERATED CAM DRIVEN MOTOR SYSTEM

(51) International classification	:H02P6/06, H02P6/08, H02P6/16, H02K7/06, H02M3/155
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
7. ABSTRACT The present invention relates to a DC solenoid-operated cam-driven motor system (100), configured to convert linear motion of solenoid armatures into rotational motion of a shaft (200) with high efficiency and torque. The system comprises a DC voltage source (300), a DC converter system (310) with a set of buck converters, a solenoid system (230) with plungers or armatures, a cam mechanism (110), a switching controller or speed controller (320), and a feedback system (340) with position detectors. The DC converters cyclically energize the solenoid coils based on switching sequences and duty cycles determined by the controller, enabling variable speed, high torque, and reversible rotation. The cam mechanism converts linear solenoid motion into shaft rotation, while permanent magnets optionally enhance efficiency and reduce power consumption. The system can cascade multiple units for higher mechanical power. Applications include electric vehicle motors, DC-driven prime movers, solar-to-AC generation, and variable-speed DC drives. The figure associated with the abstract is Fig. 1.

No. of Pages : 25 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202541122322 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GAS LEAKAGE DETECTION WITH AUTO-OFF LPG REGULATOR SYSTEM

(51) International classification	:G08B 21/16, F17D 5/06, F17D 5/02, F17D 5/00, G05B 19/042
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(57) Abstract :
The present invention provides an loT-enabled LPG Gas Leakage Detection and Automatic Safety Control System designed to prevent domestic and industrial gas hazards through real-time monitoring and autonomous safety actions. The system uses an LPG gas sensor to detect leakage above 200 ppm, a load cell to measure cylinder weight, a microcontroller for data processing, and a GSM module for SMS alerts without requiring internet connectivity. When leakage is detected, the microcontroller activates an exhaust fan, triggers a buzzer, and closes a solenoid-based regulator shut-offmechanism. Simultaneously, an SMS alert is sent to the user with relevant system information. The system also monitors cylinder weight continuously, sending a "Cylinder Almost Empty" notification when it drups below 2.5 kg. All key parameters-including gas levels, cylinder weight, and safety status-are periodically recorded and communicated to the user via GSM or an loT dashboard. The invention delivers a low-cost, reliable LPG safety solution that integrates leakage detection, cylinder depletion monitoring, automatic shut-off, and re.al-time alerting for enhanced. safety and efficient LPG management

No. of Pages : 9 No. of Claims : 6

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(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122323 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CROP MONITORING SYSTEM USING IOT

(51) International classification	:A01G 25/16, A01G 27/00, G05B 15/02, G05B 19/042, G05D 7/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an intelligent, loT-enabled irrigation system designed to provide precise, automated and remotely controllable water management for agricultural applications. The system integrates an ESP32 microcontroller with multiple environmental sensors, including a soil moisture sensor, a temperature and humidity sensor (OJ-IT I I), a real-time clock (RTC) module and a water flow sensor. These sensors continuously monitor critical parameters such as soil moisture levels, ambieill temperature, humidity and real-time water flow, enabling the system to make accurate and timely irrigation decisions. The ESP32 processes the collected data and automatically actuates a relay-operated water pump when the soil moisture falls below a predetermined threshold or when a user-configured schedule is triggered. Flow sensor feedback ensures that water delivery is verified during pump operation, enabling the system to detect dryrun conditions, pipeline leakage or motor malfunction, thereby enhancing operational safety and reliability. A dedicated server hosts a web-based dashboard that provides real-time visibility of all sensor readings and pump status. Through this dashboard, users can remotely control the irrigation pump, modifY thresholds, adjust configurations and set precise irrigation schedules. Communication between the ESP32 and the server is established using Wi-Fi, enabling seamless dala ex~.:hauge and long-distance accessibility. Ngrok is used to securely expose the server interface over the internet, allowing users to operate the system from any location without requiring static TP or port forwarding. The integration of automated decision-m·aking, multi-parameter sensing, remote control functionality and tlow·verification results in a highly efficient irrigation solution that significantly reduces water wastage, minimizes manual labour and ensures optimal watering cycles based on real-time field conditions. The invention provides a comprehensive, scalable and reliable system suitable for a wide range of applications, including agricultural fields, plantations, nurseries, greenhouses and smart farming environments. By enabling smart management of water resources through continuous monitoring and automated responses, the system contributes to improved crop health, enhanced operational convenience and sustainable agricultural practices.

No. of Pages : 5 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122324 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART PEDESTRAIN CROSSING SYSTEM USING PIR AND ULTRASONIC SENSORS

(51) International classification	:G08G 1/005, G08G 1/16, G08G 1/07, G08G 1/095, G08G 1/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Sanjai Ramanathan
4)J S.Sripriya

(57) Abstract :
This invention discloses an intelligent pedestrian-safety automation system designed to regulate lroad crossings using real-time sensing rather than fiXed-timer or manually operated signals. The system "ntegrates a microcontroller with a PIR sensor for detecting pedestrian movement and an ultrasonic ~ensor for measuring approaching vehicle distance, enabling immediate assessment of road safety lc nditions. This dual-sensor logic allows the system to decide precisely when a pedestrian crossing can lbe safely initiated. Upon confirming safe conditions, the c·ontroller activates an automated pedestrian crossing ~equence by switching the traffic light module to red, turning on the pedestrian green indicator, and · nitiating an audible alert through a buzzer. A dual 7 -segment display provides a visible countdown imer for pedestrian guidance. If the ultrasonic sensor detects nearby or fast-approaching vehicles, the ~ystem prevents crossing activation and maintains the standard traffic flow, ensuring accident-free operation. A manual override button is incorporated for situations where sensor detection may be delayed or temporarily unreliable. The entire system is powered and controlled through an Arduino-based embedded unit programmed to synchronize sensing, decision-making, signal switching, and countdoWil iming. The low-power hardware makes the invention suitable for continuous outdoor deployment under varying envirom:nental conditions, Designed with modular architecture, the invention is easy to install, configure, and scale fo different road environments sp.ch as school zones, small junctions, residential streets, and rural areas acking advanced traffic infrastructure. By providing an affordable, automated, and sensor-driven approach to pedestrian safety, the invention offers a practical smart-traffic solution for developing ~egions and contributes significantly to reducing human error and road-crossing accidents

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202541122325 A
(19) INDIA
(22) Date of filing of Application :05/12/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : STORAGE EMERGING POWER MACHINE

(51) International classification	:H02J 7/35, H02J 7/00, H02S 40/38, H01M 10/44, H02J 9/06	(71)**Name of Applicant :** **1)NANDHA ENGINEERING COLLEGE** Address of Applicant :ERODE-PERUNDURAI MAIN ROAD, VAIKKAALMEDU, TAMILNADU,INDIA. PIN:638052 Tamil Nadu India (72)**Name of Inventor :** **1)S MURUGANANTHAM** **2)C K DHANUSRI** **3)R GOKUL** **4)C MAHESHWARAN**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present invention relates to a portable, storage-based emerging power machine designed to supply reliable electrical energy in field, industrial, and remote working environments. The system consists of a compact energy-storage module, a power-distribution unit, a manual output-control interface, and a rechargeable battery that can be powered optionally by a detachable 12V solar panel. The invention delivers steady low-voltage output suitable for personal equipment and small devices, ensuring safe and dependable operation for the user. The system runs continuously until the battery is depleted and can be recharged independently or through solar energy, enabling extended use in outdoor and off-grid locations. The detachable and modular layout allows straightforward maintenance, flexible· charging options, and efficient portable power delivery, offering an affordable and energy-efficient solution for workers or users who require mobile electricity. Additionally, the system uses lightweight internal power-distribution channels that are integrated within the housing rather than externally mounted, ensuring smooth energy flow without compromising durability or ergonomics. The compact low-power conversion unit provides adequate output while keeping energy consumption optimized, making the setup suitable for prolonged outdoor or industrial usage. Its modular construction allows easy removal and replacement of the battery, conversion unit, or solar panel without affecting the main structure. Overall, this invention delivers a practical, energyefficient, and user-friendly portable power solution ideal for high-demand environments such as agriculture, construction, emergency response, and field operations.

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122326 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EDUCONNECT : UNREAL BASED AUGMENTED REALITY FURNITURE VISUALIZATION TOOL WITH NATIVE OPENCV

(51) International classification	:G06T 19/00, G06T 19/20, G06F 3/01, G06T 15/50, G
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)PRAVINESHWAR S

(57) Abstract :
The present invention discloses a marker-based Augmented Reality (AR) furniture visualization system developed using Unreal Engine and designed to operate efficiently on Android smartphones without requiring ARCore or specialized hardware support. The system enables users to preview furniture items in real-world environments by detecting printed or digital imag(: markers through the device camera and anchoring optimized 3D furniture models to the identified marker position. This approach ensures highly stable tracking performance even in environments with poor lighting or insufficient surface features, allowing the application to function reliably across a broad spectrum of mid-range devices. The invention incorporates a mobile-optimized rendering pipeline utilizing lightweight materials, reduced polygon meshes, and real-time lighting adjustments to deliver visually realistic furniture previews while maintaining performance consistency. Users interact with the virtual objects through intuitive multi-touch gestures-such as pinch-to-scale, drag-to-move, and two-finger rotation-providing precise control over the placement, orientation, and size of the displayed furniture model. All assets, textures, and logic components required for operation are packaged within the application, enabling complete offline usability without dependency on cloud services or internet connectivity. A streamlined user interface allows efficient navigation of furniture categories, selection of models, resetting of placements, and capturing of AR preview images for documentation or purchase decisions. · The system's offline capabilitY, stable marker-based tracking, and realistic visualization features make it highly suitable for interior designers, furniture retailers, and home users seeking accurate, real-time previews of furniture within actual living spaces. The invention thus offers a cost-effective, accessible, and user-friendly AR solution that enhances decision-making, reduces product return rates, and supports interior planning with minimal hardware requirements ..

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122327 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN A GATE DRIVER MALFUNCTION DETECTION AND PROTECTION CIRCUIT FOR UPS INVERTER

(51) International classification	:H02J 9/06, H02M 1/32, H03K 17/082, H03K 17/08, H02M 7/48
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)S MATHANKUMAR
3)S PRASATH
4)S SANJAY

(57) Abstract :
The present invention relates to a gate driver malfunction detection and protection circuit for use in uninterruptible power supply (UPS) inverters. The invention provides a hardware-based solution capable of detecting abnormal operation of gate driver circuits controlling power semiconductor devices such as MOSFETs or IGBTs. The circuit continuously monitors the gate voltage of each switching device and compares it with the expected pulse-width modulation (PWM) control signal to identify faults such as missing gate pulses, stuck-high or stuck-low driver outputs, and shoot-through conditions. A cross-conduction detection circuit prevents simultaneous conduction of high-side and low-side switches, while an overcurrent or desaturation detection stage senses short-circuit or overload events. Fault signals generated by these detection blocks are processed through a logic and latch circuit that disables the gate driver output within microseconds, thereby protecting the inverter and DC link from damage. The fault status is cornm1micated to the controller_ via an opto-isolated feedback cha•mel for indication and system shutdown. The proposed circuit offers fast, independent, and reliable protection against gate driver failures, enhances inverter safety, and ensures stable operation of singlephase and three-phase. UPS systems.

No. of Pages : 5 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122328 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : THERMOELECTRIC BASED BATTERY HEAT HARVESTING AND POWER CONVERSION SYSTEM USING DC-DC BOOST CONVERTERS FOR EV AUTONOMY

(51) International classification	:B60L 11/18, H01M 10/625, H01L 35/30, H01M 10/615, H01M 10/613
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
During charge/discharge cycles, electric vehicle (EV) battery packs frequently release 5- 15% of their input energy as waste heat, raising surface temperatures to 40-60°C without any kind of recovery mechanism. Conventional thermal management systems only passively reject this heat, which lowers efficiency and causes range anxiety. The energy-positive subsystem "Thermoelectric-Based Battery Heat Harvesting and Power Conversion System Using DC-DC Boost Converters for EV Autonomy" was created to solve this problem by recovering low-grade thermru energy (f1T -30°C) and transforming it into electrical power that can be used. Without the need for high-~T sources like exhaust, the system uses four TECI-12706 Peltier modules in thermoelectric generator (TEG) mode, mounted directly on the battery casing, to harvest surface heat and generate l.2V, 400mA (-Q.48W). This low-voltage DC is increased to a steady 5V, 300mA (-1.5W) supp.ly by an LM2577-based DC-DC boost converter that is integrated with a IOOJ.!H inductor and a 47J.!F output capacitor. In order to ensure maximum power extraction and 75-85% end-to-end efficiency, an Arduino Nano microcontroller interfaced with voltage/current sensors uses a Perturb & Observe (P&O) MPPT algorithm to dynamically adjust the PWM duty cycle (20-80%) based on real-time thermal input. With no additional energy input, the recovered power extends the EV range by 2-5% by trickle~chaigirig secondary buffers or powering. auxiliary loads (sensors; cooling fans, and ECUs). By lowering the qattery. surface temperature by 3 to 8°C, active heat extraction prolongs battery life and lowers the risk of thermal runaway. The system, which uses off-theshelf components and can be retrofitted to existing EV battery packs without requiring significant changes, was created with simplicity and affordability in mind. For optimization, data-logging features monitor thermal performance and energy recovery. The system has demonstrated a consistent .l.5W output and a 5% increase in range during testing, particularly when driving at high loads. In general, this thermoelectric heat harvesting solution provides a useful, affordable way to enhance energy efficiency, promote sustainable mobility, and simplify EV operation for contemporary electric vehicles

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122346 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT BASED AUDIO COMMUNICATION USING LI-FI TECHNOLOGY

(51) International classification	:H04B 10/116, H04B 13/02, H04B 11/00, H04B 10/00, H04B 10/80
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an loT-based Li-Fi Underwater Audio Communication System designed to provide a reliable, low-cost, and energy- efficient solution for transmitting voice signals in underwater environments where traditional wireless communication methods such as Wi-Fi, Bluetooth, and RF fail due to rapid signal attenuation in water. The system uses visible light communication (VLC) as the transmission medium, in which a high- brightness LED is used to modulate and transmit audio signals optically, while a solar-panel-based optical receiver captures the incident light and converts it back into an electrical audio signal for playback. The system is implemented using easily available electronic components, including a 3.5 mm audio input jack for signal feeding, high- intensity LED transmitter, solar panel detector, amplifier circuit, speaker output, 9V DC supply, and a 7805 voltage regulator for'stable and noise-free operation. The invention additionally incorporates an microcontroller (ESP32) for monitoring transmission status, signal level, and communication distance, sending real-time data to a cloud database for visualization and performance . . . . evaluation·. The design achieves underwater communication without the need for complex modulation circuits, high-frequency underwater acoustics, or expensive hardware, making it suitable for academic and experimental research environments. The prototype was successfully tested in a controlled water environment, confirming clear short-range voice transmission through water with minimal delay and acceptable audio clarity, proving the feasibility of ·light-based underwater communication using simple circuitry. The system also· demonstrated.· stable performance in varying water depth and light-scattering conditions, indicating scalability for real-time lowrange communication needs. This invention provides a portable, low-power, and cost-efficient underwater audio communication approach that can be applied to marine education projects, underwater research experiments, diver-to-diver communication, underwater robotics, and basic rescue operations, offering a practical alternative where RF and acoustic systems experience limitations.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122351 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : UAV-ASSISTED INTELLIGENT ROUTING SYSTEM FOR EMERGENCY VEHICLES BASED ON TRAFFIC DENSITY AND CROWD MONITORING

(51) International classification	:G08G 1/01, G06N 3/08, G06V 20/17, G06K 9/00, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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5)S V SOUNDHARYAA
6)S SWETHA

(57) Abstract :
7.ABSTRACT OF THE INVENTION The present invention relates to an AI-enabled multi-drone traffic detection and hospital route optimization system designed for real-time emergency response and ambulance routing. The system integrates artificial intelligence (AI), computer vision, graph-based pathfmding algorithms, and loT communication through Telegram, to identify the most efficient hospital route by analyzing live traffic conditions captured via drone surveillance. The proposed system utilizes drone video feeds positioned at multiple hospital zones to detect and count vehicles using the YOLO (You Only Look Once) deep learning algorithm. Real-time traffic density from each drone location is processed alongside geographical road network data obtained from OpenStreetMap (OSMnx). The system applies Dijkstra's shortest path algorithm, where the edge cost is computed as a function of distance and traffic density, to determine the optimal hospital with the lowest weighted route cost. Once the best route is identified, a Folium-generated map is produced to visualize the path from the accident location to the selected hospital. The map is saved as an HTML file, automatically uploaded to GitHub via API, and converted into a publicly accessible link. A screenshot of the route map is captured using Selenium and the Python Imaging Library (PJL) to create a static image. The Telegram bot interface then delivers a detailed message to users containing the best hospital name, distance and vehicle count, live route map link, and map screenshot, ensuring rapid, data-driven emergency decision-making. This invention provides a smart, automated, and efficient emergency routing framework that minimizes delay, enhances real-time awareness, and supports intelligent ambulance dispatching: By combining AI-based traffic detection, Dijkstra's algorithm, and loT communication, the ·system achieves high accuracy, scalability, and reliability, advancing the field of AI-driven intelligent transportation and emergency management systems.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122358 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SAFETY ENHANCED IRON BOX

(51) International classification	:D06F 75/26, D06F 75/24, D06F 75/38, D06F 75/40, D06F 75/34
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :
Ironing-related fire accidents and fabric burns are common due to negligence, overheating, or forgetting to turn off the iron box after use. Conventional iron boxes lack automatic safety measures to respond when the user is not handling the appliance, leading to serious safety risks and energy wastage. To address these issues, the "Safety Enhanced Iron Box" has been developed with an intelligent touch-sensing and automatic lifting mechan.ism that ensures user safety and energy efficiency. The system integrates a touch sensor, Arduino-based control unit, servo motor mechanism, and a converter-rectifier power circuit within the iron box. When the user is in contact with the handle, the system allows normal operation. Tf no touch is detected for a predefined time, the microcontroller triggers the servo motors to lift the iron box slightly from the ironing surface and simultaneously cut off power to the heating element. This prevents fabric scorching, overheating, and potential fire hazards. The mechanism is fully enclosed inside the iron box housing, ensuring durability and preserving ergonomic comfort. The touch sensor continuously monitors contact feedback, sending signals to the rnicrocontroller, which uses a timing algorithm to differentiate between active and idle states. The converter-rectifier circuit supplies stable DC voltage for servo actuation while isolating the heating circuit for safety. Additionally, a buzzer or LED alert activates just before the lifting process to notify the user. Once the user resumes contact with the handle, the system automatically lowers the iron box, restores power to the heating coil, and resumes normal operation without manual intervention. The design supports adjustable delay. settings for activation and deactivation through firmware programming, making it flexible for various user preferences. This compact design can be implemented in both dry and steam iron boxes, making it widely applicable. The Safety Enhanced Iron Box demonstrates a novel combination of mechanical automation and electrical safety design, offering a reliable, cost-effective, and user-friendly solution. It greatly reduces the risks of unattended heating, conserves electricity, extends the life of the appliance, and enhances household safety standards. The invention serves as a step toward smart home appliances, integrating automation and safety into conventional household devices.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202541122361 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-ENABLED FACE RECOGNITION FOR PERIOD WISE STUDENT ATTENDANCE MONITORING

(51) International classification	:G06V40/16, G06V10/82, G06Q50/20, G06N3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
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(87) International Publication No	: NA
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Filing Date	:NA

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(57) Abstract :
The present invention relates to an AI-enabled automated face recognition system for real-time and period-wise student attendance monitoring in educational institutions. The system integrates artificial intelligence (AQ, computer vision, and loT technologies to eliminate manual attendance marking and prevent proxy entries through intelligent facial verification and liveness detection. The proposed system employs a Pi Camera to capture live video input of students, which is then processed by a DeepFace algorithm implemented on a Raspberry Pi-based Edge-A! platform. The AI model performs accurate face detection and recognition, while a livcncss detection module validates genuine human presence by analyzing facial movements and texture variations, effectively preventing spoofmg attempts using photos or videos. Once identification is verified, the system automatically records in-time, out-time, duration, class period, and attendance status in real time. Data is securely logged into both cloud and Excel storage systems for redundancy and accessibility. A dashboard interface enables teachers or administrators to view, manage, and analyze attendance data seamlessly, while a buzzer module provides automated alerts for each class period transition. This invention offers a secure, scalable, and cost-effective attendance management solution, ensuring high accuracy, reduced human intervention, and enhanced transparency. By integrating AI and loT technologies, it supports the development of smart educational environments that promote digital transformation and operational efficiency .

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122364 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-BASED ONE STOP CAREER AND EDUCATION ADVISORY SYSTEM

(51) International classification	:G06Q 50/20, G06N 20/00, G06Q 10/06, G06Q 30/02, G06Q 10/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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3)U K Shree Sanjay
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(57) Abstract :
The Al-Based One-Stop Career and Education Advisory System is an advanced platform that uses Artificial Jntelligence, Machine Learning, and Predictive Analytics to deliver accurate, personalized, and data-driven career guidance. Unlike traditional counseling methods that rely on fixed questionnaires and subjective judgment, this system analyzes diverse datasets such as academic records, psychometric tests, personality traits, skill assessments, and real-time labor market trends. Its self-learning capability enables it to refine recommendations continuously, ensuring relevance with evolving industries and emerging career opportunities. Designed as a comprehensive digital ecosystem, the system offers integrated modules including career pathway visualization, skill gap analysis, institution recommendations, certification/course suggestions, and scholarship/internship guidance. With an intuitive user interface and implementation-agnostic architecture, it can be adopted by educational institutions, corporate HR departments, government career initiatives, and individual learners. By centralizing all career and education insights in a single platform, it empowers users to make informed, future-ready decisions

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122370 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT-BASED SMART PARKING WITH REAL-TIME SLOT DETECTION

(51) International classification	:G08G 1/14, G08G 1/017, G06Q 50/30, G08G 1/042, G08G 1/0968
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(57) Abstract :
The present invention relates to an ToT-based Community Smart Parking and Rush Detection System designed to address the challenges of unorganized parking, traffic congestion, and lack of real-time parking availability in urban and semi-urban regions. The system integrates simple, lowcost sensing technology with cloud-based data management to provide a scalable and efficient parking solution suitable for local communities, markets, bus stands, commercial complexes, and public spaces. The system uses IR or Ultrasonic sensors installed at individual parking slots to continuously monitor the presence or absence of vehicles. These sensors are connected to a Wi-Fi enabled microcontroller, such as an ESP32 or NodeMCU, which processes detection signals and transmits updated slot statuses free or occupied to a Firebase Realtime Database. The cloud platform ensures instant synchronization of data and supports multi-location monitoring under a single unified framework. A dedicated web application has been developed with two access roles: an Admin interface for creating parking locations, defining slot structures, and managing temporary or permanent slot types and a User interface for viewing available parking spaces, searching nearby locations, and navigating via. integrated Google Maps links. The application provides an intuitive dashboard that displays real-time occupancy, rush density, and slot-level details for each parking area. The system architecture is designed to minimize false detection through threshold-based logic and stable sensordata processing. By enabling fast, accurate, and accessible parking information without the need for complex infrastructure or expensive hardware, the system offers a practical solution for improving space utilization, reducing traffic congestion, and saving driver time. Its modular design allows easy expansion to multiple zones and future integration with payment gateways, analytics modules, and mobile applications. The invention contributes to modem smart-city initiatives by providing a reliable and cost-effective parking management mechanism that can be deployed even in small towns and community clusters.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122375 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-BASED ACCIDENT DETECTION WITH PREDICTIVE CONTEXT ANALYSIS

(51) International classification	:G08B 21/02, B60R 21/0132, G08G 1/16, G08B 21/04, G08B 25/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an automated Accident Detection and Alert System designed to enhance rider and passenger safety by enabling real-time identification of collision events and immediate emergency communication without relying on internet connectivity. The system integrates multiple motion-sensing components, including an accelerometer and gyroscope, to continuously monitor vehicle movement, detect high-impact forces, sudden deceleration, rollover events, or abnormal tilt patterns that are characteristic of accidents. These sensors are embedded within a compact hardware unit connected to a micro controller, which processes the incoming data, filters noise, correlates multi-sensor readings, and classifies event severity using . threshold-based algorithms. To support timely rescue operations, the system incorporates a GPS module that provides accurate real-time location data, enabling precise tracking of the accident site even in geographically remote or low-signal regions. Upon confirming an accident, the micro controller communicates with a GSM module that automatically sends an SMS alert to predefined emergency contacts. This message includes essential information such as the accident status, the user's latitude and longitude, the time of occurrence, and optional continuous updates until help arrives. The system further includes an .emergency. countdown mechanism that allows the. user to cancel . . . . . '•. . . . . false ala~s if they ar~ conscio~s, th~s 'pr~venting unnecessary notifications. Designed as a low-cost, compact, and easy-to-install solution, the invention is suitable for motorcycles, scooters, cars, and other vehicles without requiring modifications or advanced technical knowledge. By operating solely through GSM - based communication, it ensures uninterrupted functionality even without internet access, making it especially valuable in rural or isolated areas. The invention significantly improves emergency response times, increases the likelihood of timely medical assistance, and provides a reliable safety mechanism for reducing accident-related fatalities and injuries

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122378 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DIGITAL COMPLAINT ANALYZER

(51) International classification	:G06Q 50/20, G09B 19/00, G09B 7/00, G09B 7/02, G06Q 10/06
(31) Priority Document No	:NA
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(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The Digital Complaint Analyzer for Hostel Students is an intelligent, technology-driven system designed to streamline the way student grievances are collected, processed, and resolved. Traditional complaint-handling methods in hostels often involve manual registers, verbal communication, or paperbased reports, which lead to delays, miscommunication, and lack of accountability. This project introduces a digital platform that allows students to register complaints in an organized and userfriendly manner. By digitizing the complaint submission process, the system ensures that every issue is properly documented with accurate time stamps, categories, and student details, thereby eliminating errors and improving transparency within the hostel environment. The system incorporates automated mechanisms to categorize, prioritize, and route complaints to the appropriate departments such as maintenance, electrical, plumbing, housekeeping, and administration. Once a complaint is submitted, the backend analysis engine classifies the issue and forwards it to the concerned staff instantly. Staff members can update the status of the complaint, upload remarks, and _ pr.ovide.realctime_pr.ogr.ess information. The system also .includes ... an integrated notification module that alerts students about complaint updates, ensuring effective communication without the need for repeated follow-ups. This automation reduces human effort, speeds up the resolution process, and ensures that critical issues are handled promptly. In addition to complaint handling, the Digital Complaint Analyzer provides powerful analytical features that help hostel authorities make data-informed decisions. The system records all complaint activities and generates detailed insights such as frequently reported issues, resolution time statistics, department performance, and satisfaction trends. These analytics assist management in identifying recurring problems, improving hostel infrastructure, and enhancing service quality. Overall, the project offers a reliable, scalable, and efficient solution that not only simplifies the grievance-handling process but also contributes to improved student experience, better hostel administration, and enhanced accountability within the system.

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202541122388 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CREDIT CARD FRAUD DETECTION MODEL USING LIGHTGBM INTEGRATED WITH SMOTE

(51) International classification	:G06N 20/00, G06Q 20/40, G06Q 40/02, G06Q 40/00, G06K 9/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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3)Sriram R
4)U. Esakkiammai

(57) Abstract :
Credit card fraud detection is a major challenge due to the extreme imbalance between normal and fraudulent transactions. This project develops a model using light gradient boosting machine integrated with SMOTE to effectively handle class imbalance and improve detection accuracy. The process involves data preprocessing, exploratory data analysis(EDA), and model training , SMOTE generates synthetic fraud samples to balance the dataset, while lightGBM captures complex transaction patterns. The model is reduces false positives and make high accuracy. Keywords: Credit card Fraud ,LigbtGBM, SMOTE, machine learning, EDA, predictive modelling, Class imbalance, Fraud Detectiont

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202541122400 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PREDICTIVE MODELING OF EMPLOYEE ATTRITION USING RANDOM FOREST AND MACHINE LEARNING

(51) International classification	:G06Q 10/06, G06N 20/00, G06Q 10/10, G06Q 10/04, G06K 9/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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4)Jansirani D

(57) Abstract :
PREDICTIVE MODELING OF EMPLOYEE ATTRITION USING RANDOM FOREST AND MACHINE LEARNING Employee attrition has become a major challenge in organizations as it directly impacts productivity and increases hiring costs. This project aims to predict employee attrition using the IBM HR Analytics dataset by applying data preprocessing, Exploratory Data Analysis (EDA), and Machine Learning algorithms. Random Forest Classifier is used as the primary model, with additional comparison to Logistic Regression for better insights. The project also integrates SMOTE to handle class imbalance and ensures explainability by focusing on . · feature importance. The outcome provides HR managers with actionable insights to identify at-risk employees and reduce turnover .
Keywords: Employee Attrition, HR Analytics, Machine Learning, Random Forest, Logistic Regression, SMOTE, EDA, Predictive Modeling .

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122408 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AGROPATROL - A MULTI FUNCTIONALITY TERRAIN ROAMING BOT

(51) International classification	:G05D 1/02, G05D 1/00, G01N 33/24, A01M 7/00, B25J 9/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)MITHUN SRINIVASAN J
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(72)**Name of Inventor :**
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3)MITHUN SRINIVASAN J
4)SIVAKAMI S

(57) Abstract :
AgroPatrol ·- A Multi-Functional Terrain Roaming Bot for Field Surveillance is an advanced autonomous robotic system developed to. address major challenges in agriculture such as labour shortages, rising costs, and the need for precision in resource man~gement. Traditional manual field inspections are often time-consuming and prone to errors, leading to delays in detecting crop stress, pest infestation, or water scarcity . AgroPatrol overcomes these issues by combining robotic mobility, loT -based sensing, and · automated field action into a single platform. The bot is equipped with soil moisture sensors, pesticide level detectors, and high-resolution imaging systems to monitor plant health, identify nutrient deficiencies, and detect early signs of disease. Using GPS navigation· and intelligent obstacle detection, it can safely ·move across uneven terrains without human guidance. A major feature of AgroPatrol is its precision spraying mechanism, which applies fertilizers or pesticides only. in· required areas, reducing wastage, cutting costs, and protecting soil quality. Real-time data collected from the field is transmitted to farmers, enabling smarter irrigation planning, timely interventions, and sustainable farming practices. Its modular and scalable design makes it adaptable for a wide range of crops and farm sizes, from smallholder fields to large-scale agricultural enterprises .. By merging continuous surveillance, intelligent decision-making,· and targeted action, AgroPatrol minimizes human effort, improves operational efficiency, and promotes ceo-friendly farming. Ultimately, this system enhances productivity, ensures better crop quality, and supports long-term sustainability in agriculture. Key Words: Autonomous agriCultural robot, precision farming, field surveillance, soil . mois~ure detection, plant health monitoring, sustainable farming.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122409 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI PURPOSE SEA SURVEILLANCE SEARCH & RESCUE RC BOAT

(51) International classification	:G05D 1/02, B63G 8/00, G01S 15/88, G01S 15/86, B63C 9/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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4)V. Mangaiyarkarasi

(57) Abstract :
The invention reveals a multifunctional remote-controlled (RC) sea surveillance and searchand- rescue vessel intended for emergency response, maritime security and monitoring. To carry out a variety of maritime tasks, the system combines autonomous control capabilities, real-time navigation and surveillance sensors. The RC boat can identify, track and record vessel activity, floating objects, or people in distress thanks to its array of radar, GPS, cameras, sonar and wireless communication modules. In order to detect, track and identify vessels, floating debris, or people in distress in maritime environments, the RC boat incorporates a multi-sensor surveillance suite that includes radar, GPS, sonar, electro-optical/infrared (EO/IR) cameras, automatic identification system (ATS) and wireless conununication modules. By guaranteeing constant communication with a command centre or ground station, advanced data transmission gives operators a thorough picture of maritime situational awareness. The boat is equipped with specific life-saving tools for search and rescue missions, including emergency flotation devices, deployable life buoys, a two-way loudspeaker for remote conmmnication and a thermal imaging system for low visibility situations. By enabling the attachment of pollution detection sensors, water quality analysers, or medical supply kits based on mission requirements, the design further promotes payload adaptability. In order to ensure safe operation in harbours, offshore areas and coastal waters, the propulsion system is tuned for stability, endurance, and high manoeuvrability. During prolonged surveillance missions, a dual-mode control mechanism minimizes operator workload by enabling both manual remote piloting and Al-assisted semi-autonomous navigation. Defence, the coast guard, port authorities, environmental monitoring organizations, and disaster response units can all benefit from this invention's low cost, portable, and scalable maritime platform. The invention supports multi-role adaptability for both civilian and defence applications, improves maritime domain awareness, and speeds up rescue operations by integrating emergency response and sea surveillance capabilities into a single unmanned system. Keywords: Unmanned Surface Vehicle (USV), Maritime Surveillance, Search· ~nd Rescue (SAR), Dual-Mode Control System, Modular Payload Integration

No. of Pages : 8 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202541122410 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOLAR SWEEPNET AUTONOMOUS ROAD CLEANING MACHINE

(51) International classification	:E01H 1/08, E01H 1/05, E01H 1/00, E01H 1/04, E01H 1/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
The Solar SweepNet Autonomous Road Cleaning Machine is a sustainable and intelligent Robotic system that keeps roads and public areas clean. Conventional cars use fossil fuels and are costly, while manual sweeping and other traditional cleaning techniques are labour-inten·sive and hazardous to one's health. By presenting a solar-powered; self-sufficient cleaning robot, this p·roject offers a dependable substitute that lowers energy usage and human labour. The robot effec.tively cleans dust, dry leaves, and tiny waste particles by.combining a vacuum motor for dust collection with a rotating brush for debris sweeping. To make disposal easier, all collected waste is kept in a detachable bin. The design offers effective cleaning performance without the complexity of full suction-based systems, is inexpensive, and is simple to maintain. The mac. hine can. navigate on its own and avoid obstacles like ca. rs, pedes. trians, and stationary objects because of motors and ultrasonic sensors. To guarantee adequate coverage of roads and pathways without continual supervision, it can also run ·according to a predetermined cleaning schedule. Because of this, it can be used in smart city settings, on campus, and on streets. Because of Internet of Things technology, users can remotely monitor and control the system from a computer or mobile app. The dustbin's capacity, cleaning progress, battery level, and solar charging status are all shown in real time, and an alert is sent out if the bin is full or something goes wrong. The Solar SweepNet provides an economical and environmentally friendly answer to contemporary urban cleaning problems by combining solar energy, brush-and-vacuum cleaning, autonomous navigation, and Internet of Things monitoring .

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122411 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI ENABLED INTELLIGENT YOGA MAT FOR REAL-TIME POSTURE CORRECTION AND FITNESS ENHANCEMENT

(51) International classification	:A63B 24/00, A63B 26/00, A63B 71/06, A63B 6/00, G09B 19/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)D. VIVEK
3)S. SILVIA AROCKIA REGI

(57) Abstract :
A need for creative solutions that improve training quality, guarantee proper postures, and offer individualized guidance without the constant need for an instructor has arisen due to the growing popularity of holistic fitness practices like yoga. The Al-Enabled Intelligent Yoga Mat for Real-Time Posture CoiTection and Fitness Enhancement is a cutting-edge yet reasonably priced system that will help practitioners of all skill levels achieve precise postures, enhance their balance, and avoid injuries. In order to collect information on body alignment, weight distribution, and movement dynamics, the yoga mat incorporates a network of pressure sensors, flex sensors, and inertial measurement units (!MUs) that are strategically embedded. These sensors send data to a microcontroller, which preprocesses it before forwarding it to an AI system in the cloud. The system detects posture deviations in real time using machine learning algorithms that have been trained on a sizable dataset of yoga poses. The user receives remedial feedback via a mobile application that is connected to the system. This solution offers home users, fitness enthusiasts, and rehabilitation patients alike accessibility, convenience, and precise monitoring, bridging the gap between personal practice and professional-level training. The smart yoga mat not only coiTects posture but also serves as a complete fitness tracker. Users can view their pose accuracy scores, session duration, calorie expenditure, and past perfonnance trends through the user-friendly interface of the mobile application. As the user advances, the AI component continuously adjusts the difficulty of the sessions and recommends yoga poses that are best suited to each person's unique strength, flexibility, and endm'ance. The system easily connects with wearable technology, like fitness bands or smartwatches, to monitor heart rate, breathing patterns, and general activity levels for improved functionality. Effective and low-latency communication between the yoga '?at, wearable technology, and mobile applications is ensured by the integration of Bluetooth Low Energy (BLE). ·The system also has cloud storage for tracking progress, which makes it possible to analyze data over time and create customized fitness reports. These characteristics enable the yoga mat to be used not only for individual well-being but also for group classes, online training courses, and physical therapy sessiOns where proper posture and steady improvement are crucial. The design of the suggested system places a strong emphasis on affordability, portability, and durability to guarantee broad accessibility without sa~,;rificiug functionality. Because the mat's surface is composed of non-slip, environmentally friendly material, users can exercise with comfort and stability. The lifespan of embedded electronics is increased by their careful encapsulation, which protects them from moisture, perspiration, and wear. Technically speaking, the system is based on a modular hardware architecture and AT models that have been optimized to enable future scalability, including integration with voice-based coaching assistants or augmented reality (AR) guidance systems. Because it offers precise, on-demand feedback at a fraction of the price of traditional training, this project not only demonstrates the use of artificial intelligence (AI) and the Internet of Things (loT) in fitness technology, but it also helps democratize high-quality yoga instruction. In order to promote better health, prevent injuries, and improve the overall yoga experience, the AI-enabled intelligent yoga mat combines cutting-edge sensing technology with user-centered design, markiug a revolutionary leap in digital wellness

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202541122412 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART ELECTRIC VEHICLE WITH CUSTOMIZED SOC INTEGRATION

(51) International classification	:B60L3/00, B60L3/12, B60L58/10, H01M10/625, H01M10/6572
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
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(62) Divisional to Application Number	:NA
Filing Date	:NA

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3)LOGENDRA G
4)VAHEED BASHA U
5)SANJAY S
6)JASMIN M
(72)**Name of Inventor :**
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2)LOGENDRA G
3)VAHEED BHASHA U
4)SANJAY S

(57) Abstract :
The rapid growth of electric mobility highlights the need for smarter, safer, and more efficient control systems, especially in lightweight platforms such as electric bicycles. Conventional microcontroller-based designs face limitations in speed, scalability, and integrated safety mechanisms. To overcome these challenges, this project introduces a customized System-on-Chip (SoC) architecture on FPGA, consolidating critical functions like motor control, regenerative braking, battery monitoring, and fault detection into dedicated logic blocks. This integration.ensures faster execution, lower latency, and improved reliability compared to traditional approaches. A distinctive feature of the system is a thennally engineered battery protection chamber equipped with Peltier cooling modules, which activate automatically when temperature thresholds are exceeded to prevent overheating, fire, or explosion risks. The design also incorporates regenerative braking to convert kinetic energy into electrical energy, extending battery life and vehicle range. For user interaction, a real-time dashboard powered by Zephyr RTOS provides speed, state-of-charge, brake status,· and fault alerts, while maintaining seamless communication with the SoC core. With its modular structure supporting loT-based monitoring, GPS navigation, and predictive maintenance, the project establishes a scalable and patent-worthy framework for SoC-driven e-mobility, combining hardware acceleratio

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122413 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS WEED DETECTION AND REMOVAL SYSTEM USING CNN AND PYTHON-CONTROLLED EMBEDDED PLATFORM

(51) International classification	:G05D 1/02, A01M 21/04, G06N 3/08, A01M 21/02, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(72)**Name of Inventor :**
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(57) Abstract :
This project presents the development of an Autonomous 'vVeed Detection and Removal System using CNN and Python-controlled embedded Platform aimed at addressing one ofthe most persistent challenges in agriculture uncontrolled weed growth. The system integrates Convolutional Neural Networks (CNNs) with an embedded platform programmed in Python to enable real-time, intelligent weed management. The crop field is contiJ1uously photographed by a high-resolution camera module, and the pre-trained CNN model analyzes the photos to reliably identify weeds and crops. The inbuilt controller determines the weed's location when detection is finished and starts a mechanical removal process that precisely removes the weed without upsetting the crop. GPS guidance, obstacle detection, sensor-based-navigation, and wireless connection are additional features added to the system to guarantee full field coverage. These features provide smooth field movement and remote monitoring. This approach was designed in response to the shortcomings of conventional weed control methods. Chemical herbicides lower soil fertility, increase environmental pollution, and present health hazards, whereas manual weeding is time-consuming, labor-intensive, and impractical for large-scale tarming. Farmers have further difliculties during the busiest funning seasons due to the scarcity and high cost of human labor. The suggested system reduces operational expenses, dependence on hazardous chemicals, and human labor by combining embedded control and artificial intelligence. By preserving soil health, minimizing environmental harm, and facilitating steady crop development, the system also supports sustainable agriculture practices. Improved agricultura I output, lower tarm ing costs, and scalability across various crop varieties and field circumstances are among the anticipated results. Beyond its current agricultural benefits, this study shows how embedded technology and deep learning can be used to solve practical food security issues and how such intelligent systems can help realize the goal ofto1thcoming smart farming environments .

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122414 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT BASED AUTOMATED IRRIGATION AND ENVIRONMENTAL MONITORING FOR PRECISION AGRICULTURE

(51) International classification	:A01G 25/16, G06Q 50/02, A01G 27/00, A01G 25/00, A01G 25/09
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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3)J Sreemathi
4)S Hemalatha

(57) Abstract :
The main goal of this project is to address the challenges in agriculture such as water wastage, irregular irrigation, unpredictable weather, and shortage of labour. The proposed solution is an loT -based Automated Irrigation and Environmental Monitoring For Precision Agriculture designed to make· farming smarter, more efficient, and sustainable. By combining automation with advanced sensor technologies, the project enables real-time monitoring and control for precision agriculture. · The system is developed using an ESP32 microcontroller integrated with soil moisture, water level, temperature, humidity, rain, flame, and current sensors. These sensors continuously track environmental and crop condition~. Based on the collected data, the system automaticallx irrigates the soil when it is dry, stops irrigation when the tank overflows or when it rains, and triggers alerts in case of fire or abnormal current flow. In addition, a Bluetooth module allows farmers to control and monitor the system. through a mobile application, providing flexibility and ease of use. This smart irrigation prototype is portable and cost-effective, helping farmers conserve water, improve crop health, and reduce manual work compared to traditional farming methods. The project also promotes sustainability by encouraging eco-friendly agricultural practices. By integrating loT with automated irrigation and environmental monitoring, this project offers an innovative and sustainable solution for modern agriculture. With further development, it has the potential for commercialization and patenting, giving farmers an affordable and reliable tool for precision farming . Keywords: Smart Irrigation, Precision Agriculture, loT, Automation, Environmental Monitoring.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122415 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND DEVELOPMENT OF FLEXI FOOT MACHINE USING IOT

(51) International classification	:A61H 1/02, A61H 3/00, A61F 5/01, A63B 23/04, A61B 5/11
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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4)M VIGNESHWARAN
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3)M VIGNESHWARAN
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5)G VIJAYAKUMARI

(57) Abstract :
The human foot plays a vital role in maintaining posture, balance, and mobility. Any irregularities or discomfort in foot structure can lead to difficulties in walking, reduced efficiency in physical activities, and even long-term musculoskeletal issues. To address these challenges, this project proposes the design and development of a Flexi Foot Machine integrated with loT technology. The Flexi Foot Machine is a smart rehabilitation and monitoring device that helps in correcting foot alignment, improving flexibility, and providing therapeutic exercises for individuals suffering from conditions such as flat foot, plantar fasciitis, clubfoot, or post injury stiffness. The system incorporates mechanical actuation for controlled flexing and stretching of the foot, ensuring both comfort and effectiveness during use. Pressure sensors, angle sensors, and strain gauges are embedded within the device to capture real-time biomechanical data such as foot pressure distribution, ankle rotation angles, and force exerted. An loT-enabled microcontroller is used to process these inputs and transmit data wirelessly to a cloud platform or mobile application. This allows patients, physiotherapists, and doctors to remotely monitor progress, analyse performance trends, and customize therapy sessions according to individual needs. The use of loT also enables features like session tracking, feedback alerts, and AI-based recommendations for corrective exercises. The proposed system combines mechanical design, embedded electronics, and loT connectivity to create an affordable, user-friendly, and portable rehabilitation tool. Unlike traditional therapy devices, the Flexi Foot Machine provides quantifiable data and remote access, making it suitable for home-based care as well as clinical applications. This integration of sma1i technology in physiotherapy ensures faster recovery, better patient compliance, and long-tem1 foot health management. To spot questionable activity, such as someone aggressively following or approaching someone, the robot will use motion detection or facial recognition technologies.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122416 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TRASHTRACK: WASTE DISPOSAL MONITORING WITH UV-C STERLIZATION AND PLASTIC COMPRESSION

(51) International classification	:B65F 1/14, B65F 1/00, B65F 1/16, B09B 3/00, B65F 7/00	(71)**Name of Applicant :** **1)NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY** Address of Applicant :NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY(AUTONOMOUS) SANTHOSAPURAM,CHENNAI,TAMILNADU,INDIA. PIN:600073 Tamil Nadu India **2)Pravina S** **3)Salini K** **4)Durgadevi G**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	(72)**Name of Inventor :**
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(86) International Application No	:NA	**2)Salini K**
Filing Date	:NA	**3)Durgadevi G**
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
Waste management in pub I ic and institutional areas is frequently plagued by challenges such as inappropriate disposal, bad odours, and hygiene hazards. Conventional. bins lack measures to ensure safe handling and responsibility for garbage disposal behaviour. This concept presents TrashTrack, a smart lrashcan system that combines Al-powered vision monitoring, UV-C sanitation, and actuator-driven plastic compression in a single module. The AI camera identifies and records instances of inappropriate garbage disposal, allowing for accountability and punishment. Following each usage, a UV-C light sterilization cycle is initiated to eliminate germs and odour, guaranteeing sanitary conditions within the bin. An integrated low-power actuator compresses plastic garbage into compact blocks, lowering bulk and making recycling easier. The device also uses ultrasonic sensors to check fill levels and give timely alarms. Through this integration, the project aims to create a cleaner, safer, and more sustainable waste management solution suitable for campuses, hospitals, airports, and smart cities. Keywords: AI Monitoring, Smart Waste Management, UV-C Sterilization, Plastic Compression, loT -based Monitoring

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122417 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EMBEDDED / IOT BASED SMART TRAFFIC CONE FOR DYNAMIC ROAD SAFETY

(51) International classification	:G08G 1/095, G08G 1/0967, G08G 1/16, G08G 1/09, G08G 1/017
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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4)S. HEMALATHA

(57) Abstract :
Traditional traffic cones serve· as passive visual markers, offering limited effectiveness in low- visibility conditions such as heavy rain, fog or night time driving. To overcome these limitations this invention introduces an AI- Based Smart Traffic Cone and a transformative intelligent safety device engineered to actively monitor, respond and alert in real time. The system is builtaround an Arduino microcontroller, interfaced with an ultrasonic sensor to detect approaching vehicles and a rain sensor to assess environmental conditions. Based on live inputs, the microcontroller dynamically controls RGB LED for adaptive visual signaling and a Hluetooth enabled speaker for voice based driver alerts. These alerts are context sensitive varying in intensity and pattern according to vehicle speed, proximity and weather severity. Power is supplied via a solar panel and rechargeable battery ensuring uninterrupted,_ ecofriendly operation even in remote or off-grid locatio_ns. The system intelligence is further enhanced by AI Algorithms that analyze traffic density. This enables predictive safety responses such as escalating LED brightness or switching to multilingual voice alerts during high risk scenarios. Designed for deployment m highways, construction zones, school crossmg and accident prone areas, the smart cone offers a scalable, low maintenance solution for modern traffic management. Its modular architecture ·allows for future upgrades, including mesh networking, cloud sync and integration with smart city infrastructure. By combining embedded sensing, renewable energy and AI driven decision making, this invention redefined roadside satety as an active, autonomous and intelligent system capable of preventing accidents, enhancing driver awareness and supporting emergency response operations

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122423 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEEP LEARNING BASED WELDING DEFECT CLASSIFICATION USING MOBILENET AND PREDICTION RESULT THROUGH WELD CLASSIFIER BOT

(51) International classification	:G06T 7/00, G06N 3/08, G06K 9/62, G06N 3/04, G06V 10/764
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Praveen Kumar M
3)Neeraj Kumar Boraik

(57) Abstract :
The invention presents a novel Deep Learning-Based Welding Defect Classification System using the MobileNet architecture and Weld Classifier Bot for real-time defect detection. Welding images are sent to the Telegram bot, which forwards them to a deep learning model for processing and classification. This system enhances accuracy, reduces inspection time, and minimizes human intervention. Designed for manufacturing and industrial applications, it offers a cost-effective, automated solution for welding quality inspection, addressing inefficiencies in traditional manual and hardware-based defect detection methods

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122493 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT EXPENSE TRACKER WITH SMS-BASED TRANSACTION MONITORING

(51) International classification	:G06Q 40/00, G06Q 20/32, G07F 19/00, G06Q 20/10, G06Q 20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Sakthisri D
4)Priyadharshini S
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(72)**Name of Inventor :**
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3)Priyadharshini S
4)Subburam S

(57) Abstract :
The rapid growth of digital payment systems such as Google Pay, PhonePe, and Paytm has significantly increased the number of electronic financial transactions conducted on a daily basis. Every transaction generates an SMS notification from banks or payment gateways, which contains essential details such as the amount, time, and transaction description. However, manually tracking these SMS messages and classifying them into meaningful financial records is both time-consuming and error-prone. To address this issue, this project proposes the development of an /\!-powered Expense Tracker Application that automatically reads transaction-related SMS messages, categorises them intelligently, and presents a clear financial overview to the user. The proposed system is designed to function entirely offline, thereby ensuring data privacy and security by keeping all user information within the device itself. The application employs a Naive Bayes Machine Learning Algorithm (implemented in Dart language) for text classification. The received SMS messages are pre-processed by tokenising and extracting keywords, which are then fed into the machine learning model to predict the most appropriate expense category, such as Food, Travel, Bills, or Shopping. In cases where the model prediction is uncertain, the user can manually assign a category, and this correction is used to incrementally retrain the model, allowing the system to continuously learn and tmprove accuracy over time. The system architecture is divided into three layers: the Data Access Layer (responsible for receiving transaction SMS and UPI app data), the Business Logic Layer (handling SMS reading, keyword extraction, machine learning classification, and categorisation), and the Presentation Layer (responsible for displaying insights through dashboards, reports, and charts). The application also provides features such as budget setting, dark/light mode themes, income and expense summaries, and notifications when expenses exceed the predefined budget. This ensures that the user has not only an automated categorisation system but also a Lt; personalised financial management assistant.

No. of Pages : 10 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122498 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT-BASED PIPELINE BLOCKAGE DETECTION SYSTEM

(51) International classification	:F17D 5/06, F17D 5/00, F17D 5/02, G01M 3/28, G01F 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)S.M.Nandhini
4)K.Nishanthini

(57) Abstract :
The invention relates to a system developed for identifying blockages in water pipelines by interpreting variations in the natural flow behaviour of water. The system is integrated with an ESP32 microcontroller and flow sensor that continuously observe the water's movement inside the pipe. It allows the device to assess the state of flow at any moment. This invention works independent) y, monitoring every incoming pulse without any kind of manual triggering. If the movement of water strays from the normal flow profile, the controller understands it as a signal that there is an obstruction. Small reductions in flow and near-complete blockages are able to be identified by this system, thus allowing for early detection before the pipeline can become completely clogged. Once the flow condition is identified to be abnormal, the system turns immediately to alert mode by actuating various types of indication. These can be audible signals, light-based, and optionally wireless notifications via network capability. The prompt notification ensures that users are informed at the earliest possible instance, thereby minimizing damage to the pipeline or interruption of supply. The invention is designed with cost efficiency and practical deployment in mind, using easily available components so that it can easily be implemented in a wide range of plpelines found in households, agricultural systems, industrial setups, and rural water lines. The hardware arrangement is simple, compact, and suitable for new installations as well as retrofit applications. · It provides a reliable method for achieving uninterrupted water distribution by offering real-time observation of flow, automatic recognition of blockages, and instant alerts to users. The system contributes to reduced maintenance expenses, improved operational safety, and enhanced efficiency in water management, as it is a valuable tool for environments where continuous pipeline performance is a must.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122500 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART PILL DISPENSER WITH AI

(51) International classification	:A61J 7/04, G16H 20/13, A61J 7/00, A61J 1/03, A61J 7/02	(71)**Name of Applicant :** **1)NANDHA ENGINEERING COLLEGE** Address of Applicant :ERODE-PERUNDURAI MAIN ROAD, VAAIKKAALMEDU, ERODE, TAMILNADU,INDIA. PIN:638052 Tamil Nadu India (72)**Name of Inventor :** **1)P. Karunakaran** **2)J. Anbarasan** **3)V. Balanagavarman** **4)S. Hari Ram** **5)R. K. Sunil Kumar**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
This invention relates to an automated, Al-enabled Smart Pill Dispenser d~signed to improve medication adherence, reduce human error, and provide reliable dose tracking for patients requiring strict and timely medication intake. The system integrates an ESP32 microcontroller with servodriven pill compartments, IR-based dose verification, onboard scheduling logic, and emergency alert capabilities to deliver an end-to-end medication management solution. The invention eliminates manual handling mistakes by automating pill release, monitoring user interaction, generating audible reminders, and communicating niiss.ed-dose alerts to caregivers. The dispensing unit consists of a set of servo-controlled chambers that open individually based on predefined medication schedules stored within the ESP32. At each cycle, the allocated compartment rotates or opens, releasing a single dose onto the collection tray. An IR sensor mounted at the exit path detects whether the pill has been removed by the user, allowing the system to verify dose completion rather than simply issuing a reminder. An OLEO display presents real-time data including the medication name, dosage timing, next-cycle countdown, and sensor status. A buzzer provides audible alerts during dispensing and escalates its pattern if a dose is repeatedly ignored. The_ device integrates optional GSM connectivity to notify family 111embers or caregivers if a dose is missed or if irregular behaviour is detected. The system can also log historical dispensing data, enabling long-terrn compliance monitoring. Its low-power design supports battery operation, making it suitable for home use, clinic-s, and elderly-care environments with limited access to constant power. Designed with a modular and serviceable architecture, the Smart Pill Dispenser supports easy replacement of servos, sensors, and communication modul_es without altering the core control system. Its compact physical layout and enclosed dispensing mechanism ensure hygiene, safety, and protection from accidental access. By combining automated scheduling, secure dispensing, real-time verification, and remote alerting, this invention provides a dependable and user-friendly solution for ensuring timely medication intake and reducing health risks associated with missed or incorrect doses.

No. of Pages : 7 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION (21) Application No.202541122504 A

(19) INDIA

(22) Date of filing of Application :05/12/2025 (43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED SYSTEM FOR EFFICIENT CYBER INCIDENT DETECTION AND RESPONSE IN CLOUD ENVIRONMENTS

(51) International classification	:H04L 29/06, G06N 20/00, G06F 21/55, H04L 9/40, G06F 21/57	(71)**Name of Applicant :** **1)NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY** Address of Applicant :NEW PRINCE SHRI BHAVANI COLLEGE OF ENGIN AND TECHNOLOGY(AUTONOMOUS)SANTHOSAPURAM,CHENNAI,TAMILNAI PIN:600073 Tamil Nadu India **2)M. DINESH KUMAR** **3)R. SURIYA** **4)R.ARUN** **5)S. KANMANI JEBASEELI**
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(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :

With the rapid growth of cloud computing, cyberattacks have become more sophisticated and occur at a pace that traditional security mechanisms cannot effectively counter. Modern attackers exploit vulnerabilities through techniques such as Denial of Service (DoS), probing, and unauthorized access, which threaten the reliability and security of cloudhosted applications and data. This highlights the urgent need for an adaptive and intelligent security framework capable of responding in real time. To address this challenge, the proposed project develops an AI-powered Intrusion Detection System (IDS) that leverages machine learning to analyze network traffic and detect intrusions instantly. The system is trained using the NSL-KDD dataset, which provides diverse attack scenarios, enabling the detection and classification of threats such as DoS, Probe, Remote-toLocal (R2L), and User-to-Root (U2R). Supervised learning models like Random Forest and SVM are employed to ensure higp accuracy while minimizing false positives and false negatives. The solution is designed to be deployed on the A WS cloud platform, utilizing services such as EC2 for computation and S3 for storage. This cloud-native approach ensures scalability, availability, and fault tolerance, making the IDS suitable for real-time monitoring under heavy network traffic. Automated alerts and reports are generated for immediate response, while the system periodically retrains itself to adapt to emerging attack patterns. By combining artificial intelligence, machine learning, and cloud technologies, this project aims to create a proactive, intelligent, and adaptive security system. The outcome will significantly enhance the protection of cloud-based applications and infrastructures, offering organizations a reliable way to mitigate cyber risks and ensure data integrity in dynamic network environments. Keywords: Intrusion Detection System (IDS), Machine Learning, NSL-KDD Dataset, Cybersecurity, Cloud Computing (A WS), Real-Time Threat Detection .

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122508 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE TEXTILE ANTENNA FOR NON-INVASIVE GLUCOSE TRACKING

(51) International classification	:H01Q 1/27, A61B 5/145, A61B 5/00, A61B 5/1486, A61B 5/1459
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Ms. YOGA BHARA THI A
4)Mrs. VIJAYA KUMARI G

(57) Abstract :
ABSTRACT WEARABLE TEXTILE ANTENNA FOR NON-INVASIVE GLUCOSE TRAACKING The project "Wearable Textile Antenna for Non-Invasive Glucose Tracking" is aimed at improving healthcare. monitoring by providing an easy-to-use, comfortable, and non-invasive method of continuously measuring glucose levels. Diabetes is one of the most common chronic diseases worldwide, and its management depends heavily on regular monitoring of blood glucose. Conventional methods, which involve finger pricks or implantable sensors, are either painful, inconvenient, or expensive, and often discourage patients from frequent monitoring. Our project focuses on overcoming these limitations by integrating textile-based antennas into everyday clothing or wearable accessories, enabling seamless and real-time glucose tracki.ng without the need for invasive procedures. The design of the wearable antenna is based on lightweight, flexible, and biocompatible fabrics that can be comfortably worn without affecting daily activities. The antenna is engineered to interact with the body's tissues and detect variations in dielectric properties caused bychanging glucose concentrations. These signals are then processed using advanced algorithms and microcontrollers to provide accurate glucose level estimations. By embedding the antenna into common textiles, the system remains discreet, portable, and user-fTiendly, ensuring that individuals can continuously monitor their health with minimal effort. To ensure safety, reliability, and long-term usability, the wearable textile antenna system incorporates low-power wireless communication, energy-efficient circuits, and robust calibration mechanisms. The device can be paired with smartphones or medical platforms, allowing patients and healthcare professionals to access glucose readings in real time. This connectivity further enables remote health monitoring, timely alerts, and personalized diabetes manageme.nt. Beyond its primary use for diabetic patients, this technology also holds potential applications in broader healthcare monitoring and preventive medicine. The wearable textile antenna represents ~n innovative step toward merging electronics with everyday clothing, making healthcare less intrusive and more accessible. Ultimately, this project contributes to enhancing the quality of life for millions of people by providing a reliable, non-invasive, and costeffective solution for continuous glucose tracking. Keywords: Continuous glucose tracking, smart health device, real-time biomedical sensing, flexible and lightweight sensor, non-invasive glucose tracking.

No. of Pages : 10 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122509 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED SMART SURVEILLANE SYSTEM FOR WILDLIFE AND ANTI-POACHING USING YOLO ON RASPHERY PI

(51) International classification	:H04N 7/18, G08B 13/196, G06V 20/52, G06K 9/00, G06K 9/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Mrs. G. Sheeba
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(57) Abstract :
ABSTRACT AI-POWERED SMARTSURVEILLANCE FOR WILDLIFE MONITORING AND ANTI-POACHING USING YOLO ON RASPBERRY PI Illicit poaching and habitat encroachment pose serious threats to wildlife populations worldwide. Manual patrolling and static camera setups are examples of traditional surveillance techniques that are frequently ineffective, slow, and lack real-time response. To keep an eye on wildlife activity and stop illegal human entry into protected areas, there is a growing need for intelligent, automated, and reasonably priced surveillance systems. An effective strategy to deal with this issue is the combination of embedded systems and artificial intelligen~,;e (AI). This project suggests a Raspberry Pi-based AI-powered smart surveillance system that uses the YOI ,0 (You Only Look Once) object detection algorithm. In order to identify and categorize wildlife as well as possible threats like poachers, the system uses a camera to record live video and processes it in real time. Because of its reputation for quick and precise object detection, YOLO is perfect for real-time monitoring in dynamic settings like forests. The system can distinguish between humans and animals with high accuracy thanks to a pretrained model that has been refined on pertinent datasets. Because of its low cost, portability, and low power consumption, the Raspberry Pi is a good choice for deployment in isolated locations without reliable infrastructure. The Raspberry Pi runs the YOLO model locally lowering reliance on cloud computing or internet access. The system can notify forest authorities via SMS, email, or loT when it detects suspicious activity or unauthorized human presence, allowing for prompt action and the avoidance of poaching incidents. By providing a scalable, intelligent, and economical solution for ongoing monitoring, this project seeks to support wildlife conservation. The system enhances the safety of endangered species, guarantees round-the-clock surveillance, and helps forest officials make proactive decisions by fusing computer vision and embedded technology. This AI- based strategy is a step forward in the effective and sustainable use of contemporary technology to preserve biodiversity and stop illicit poaching.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122510 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VOICE CONTROLLED ROBOTIC ARM FOR PHYSICALLY CHALLENGED PERSON

(51) International classification	:B25J 11/00, B25J 3/00, B25J 13/00, B25J 9/16, A61F 2/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Mrs. Hemamalini V

(57) Abstract :
ABSTRACT Voice Controlled Robotic Arm for Physically Challenged Person The project "Voice Controlled Robotic Arm for Physically Challenged Person" is aimed at improving the quality of life of people with physical disabilities by giving them more independence in their da '-to-day activities. In today' s world, many prosthetic devices are either very expensive or too complicated to use, making them inaccessible for many people. Our project focuses on solving this problem by developing a low-cost, lightweight, and easy-to-use . robotic arm that can be controlled entirely. through voice commands. With this system, users can simply speak to perform actions like holding, lifting, rotating, and releasing objects, without needing any physical effort. · The design of the robotic arm is based on affordable components such as a speech recognition module, a microcontroller, servo motors, and 3D-printed parts. The 3D-printed structure makes the arm lightweight, customizable, and easy to repair. Servo motors are used to control movements of the arm, while the microcontroller processes the user's spoken instructions and converts them into mechanical actions. The use of voice recognition technology makes the system simple and user-friendly, especially for people who may not be able to use complex controls. To ensure safety and reliabiiity, the robotic arm includes features like collision avoidance and an emergency stop function. The design is modular, meaning that parts such as the hand, elbow, or shoulder can be replaced or· upgraded individually without needing to change the eritire device. Additionally, the system has the ability to learn and adapt to the user's common commands, improving grip strength and motion patterns over time. This makes the arm more personalized and efficient for each user. Beyond the technical aspects, the project has a strong social purpose. It reduces the dependence of differently abled individuals on caregivers, increases their independence, and gives them more confidence in their daily lives. Since the arm is affordable and made from widely available components, it can also benetit people in rural areas, developing countries, or lowincome communities where access to advanced medical devices is limited. The expected outcome of the project is a functional and affordable assistive device that not only restores mobility but also empowers differently abled people by bridging the gap between disability and ability. The novelty of the project lies in its combination of voice-controlled operation, modular design, and low-cost production. With these features, the robotic arm also has strong potential for patent filing and further development for use in healthcare, rehabilitation, and other related fields.
Keywords: Voice Control, Independence.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
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(22) Date of filing of Application :05/12/2025
(21) Application No.202541122511 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYBRID MESH -IOT KIT FOR UNINTERRUPTED DISASTER COMMUNICATION

(51) International classification	:H04W 4/90, H04B 7/185, H04W 84/18, H04L 12/28, H04L 12/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Ms. A. ANUSHIYA
3)Mrs. M. SUGANYA

(57) Abstract :
ABSTRACT HYBRID MESH-lOT KIT FOR UNINTERRUPT COMMUNICATION Communication failure is one of the most critical challenges during natural disasters such as earthquakes, floods and cyclones. When cellular towers collapse, power supply is disrupted and internet access becomes unavailable, sun;ivors and rescue teams are left without any reliable means of coordination. This results in severe delays in rescue operations, ineffective resource allocation and unnecessary loss of lives. Existing solutions like satellite phones are costly, limited in number and impractical for large scale rapid deployment. The proposed invention introduces a Hybrid Disaster Communication Kit that ensures uninterrupted, scalable and cost effective communication in both offline and online scenarios. The system is built around ESP32 based nodes that form a decentralized mesh network during offline operation. In this mode it enables the real-time GPS based SOS alerts, priority and group messaging, node health monitoring and live mesh topology mapping without requiring internet or cellular connectivity. This makes it possible for survivors and field responds to stay connected even in isolated conditions. When connectivity is restored the system automatica:tly switches to lOT enabled mode through a gateway node. In this mode, the gateway synchronizes data with a cloud platform enabling Alpowered disaster alert forwarding, cloud logging of SOS data and two-way multimedia exchange between survivors and the command Centre. A survivor self- check-in feature further reduces rescue workload and enhances situational awareness for authorities. Designed for portability and rapid deployment, the kit is lightweight, compact and operates on low power or solar Page I of 2 backup, making it suitable for disaster-hit regions, rural connectivity and large scale events. It's .dual mode adaptability seamlessly shifting between offline mesh networking and online lOT integration provides. unmatched reliability compared to existing solutions. By bridging the gap between isolated communities and centralized response teams, this system significantly improves real-time coordination, resource distribution and emergency response efficiency. The invention is a low cost, scalable and lifesaving communication solution ensuring that no call for help goes unheard during critical emergency

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122512 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOLAR BACKED IOT ENERGY METER WITH REAL-TIME MONITORING AND AUTOMATIC CUTOFF MECHANISM

(51) International classification	:H02J 7/35, H02J 7/00, G01R 22/06, G01R 21/133, H02J 3/38	(71)**Name of Applicant :** **1)NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY** Address of Applicant :NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY(AUTONOMOUS) SANTHOSAPURAM, CHENNAI,TAMILNADU,INDIA. PIN:600073 Tamil Nadu India **2)Ms. Abinaya M** **3)Ms. Jothiga S** **4)Ms. Priyadharshini B**
(31) Priority Document No	:NA	**5)Ms. Reena K**
(32) Priority Date	:NA	**6)Dr. M. JASMIN**
(33) Name of priority country	:NA	(72)**Name of Inventor :**
(86) International Application No	:NA	**1)Ms. Abinaya M**
Filing Date	:NA	**2)Ms. Jothiga S**
(87) International Publication No	: NA	**3)Ms. Priyadharshini B**
(61) Patent of Addition to Application Number	:NA	**4)Ms. Reena K**
Filing Date	:NA	**5)Dr. M. JASMIN**
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
DESCRIPTION OF THE DRAWING The block diagram shows how a solar-powered Internet of Things energy meter with automatic cutoff and real-time monitoring operates. The solar panel at the start of the system produces renewable energy and uses a charge controller to charge the battery. This guarantees correct charging and guards against deep discharge or overcharging of the battery. The system can be powered by an AC/DC source in addition to solar energy. A voltage sensor keeps an eye on the supply or load voltage, while the current sensor (ACS712/CT) detects the load current. The ESP8266 microcontroller, which serves as the system's main controller, receives both of these sensor values. After processing the data, the ESP8266 transmits it to the cloud for remote monitoring and shows it locally on an LCD display. Through a web page, customers can examine the energy consumption, voltage, current, and load status in real time thanks to the cloud platform's ToT -based control and monitoring capabilities. The controller operates a relay that regulates the connected load based on the sensed data. The relay instantly disconnects the load in the event of abnormal conditions like overvoltage, overcurrent, or faults, and the alarm system notifies the user. Safety is guaranteed, and connected equipment is shielded from harm hy this automated cutoff mechanism. The system offers a dependable, effective, and intelligent solution for contemporary energy management with solar backup, real-time monitoring, cloud-based control, and safety measures. DETAILED DESCRIPTION OF THE PRODUCT 1. A solar panel The primary renewable energy source m this system is the solar panel. In order TO run The system and charge the battery, it transforms sunlight into dt:drical energy. 2. Controller for Charge The solar panel's electricity is controlled by the charge controller before being sent to the battery. It guarantees the battery lasts longer and operates safely by preventing deep draining and overcharging. 3. A battery The energy produced by the solar panel is stored in the battery. When sunlight is scarce, it provides the system with power, ensuring uninterrupted operation. 4. AC/DC power This is the external power source that comes from other AC/DC sources or the grid. It ensures dependability by serving as a backup power source in the event that solar energy is insufficient. 5. Sensors (Current & Voltage) Current sensor (ACS712) measures load current; voltage sensor monitors supply voltagt; for abnormal conditions . 6. ESP8266 Controller The primary microcontroller with Wi-Fi functionality is the ESP8266. It gathers information from sensors, processes it, manages the relay, and transmits it to the Internet of Things cloud. The LCD display is also updated by it. ~ 7. Load Control Relay ~ To tum the load (appliances) ON or OFF, the relay functions as a switch. Under unusual circumstances, u -· ___ _i.t ~utmpl!!i'2!l!y gi~onn_e~~s _!h!!.l~.a~ ~nder_th~ c~n_!r?l of !.h~ £_8:~8266. ~-~· .. ·./~.·.t·.~ ~+-t· !J·f-.t--.1:.!:_,.~ .L,.i:tt:.ft.~·-ffl·.,~~-1 ~ :D· _.t_!tf·.l --~ 2-. .i~I-~'-b· .i i:: 2 5· I 1.1') 0 -Q) C) Ill D.. Q) -1-- N E.... 0 -LL. .N... . Lt) N .N... . ..... -::1' Lt) N 0 ~ N (0 (0 .N... . Ln N 0 ~ CJ '· 8. Cutoff & Alarm When dangerous situations, like overload or short circuit, arise, the alarm notifies the user. The cutoff mechanism protects the system and appliances by cutting off the load. 9. LCD Screen Important data such as voltage, current, power, and system status are displayed on the LCD. It enables the user to keep an eye on data locally without requiring internet connectivity. 10. loT Platform & Website Cloud stores data for remote monitoring and control through a user-friendly web interface. EMONLIB LIBRARY Electrical metrics ,including voltage, current, power, and energy usage ,are measured using the EmonLib software. It keeps an eye on the input signals all the time, computes precise averages, and sends them to the Arduino application for energy analysis in real time. BL Y NK Tl'IHHA.H.Y For Intem~fof Things applications, the hardware is connected to the Blynk Cloud using the Blynk library. Thfough a web dashboard or mobile app, customers may remotely control the device and view energy dat~1in real time.

No. of Pages : 8 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025

(21) Application No.202541122513 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART CHAIR WITH POSTURE MONITORING SYSTEM

(51) International classification	:A47C 7/62, A61B 5/11, A47C 31/12, A61B 5/00, G06F 3/01	(71)**Name of Applicant :** **1)NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY** Address of Applicant :NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY(AUTONOMOUS) SANTHOSAPURAM, CHENNAI,TAMILNADU,INDIA. PIN:600073 Tamil Nadu India **2)Mr. Sarveswaran S** **3)Mr. Prasanth S** **4)Mr. Alex V** **5)Mrs. G.Sheeba**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	(72)**Name of Inventor :**
(33) Name of priority country	:NA	**1)Mr. Sarveswaran S**
(86) International Application No	:NA	**2)Mr. Prasanth S**
Filing Date	:NA	**3)Mr. Alex V**
(87) International Publication No	: NA	**4)Mrs. G.Sheeba**
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
SMART CHAIR WITH POSTURE MONITORING SYSTEM This project presents a Smart Desk integrated with a real-time posture monitoring system aimed at promoting ergonomic health during prolonged desk usage. Utilizing a USB camera and ·Python-based pose estimation algorithms, the system continuously analyzes the user's sitting posture. When poor posture is detected, alerts are triggered via an ESP32 microcontroller, which activates a buzzer and displays a warning on an 12C LCD screen. Additionally, an loT -enabled notification system sends an email alert to reinforce corrective action. The modular design ensures seamless communication between the PC and ESP32 through serial data exchange, enabling efficient posture classification and response. This solution not only enhances user awareness but also contributes to long-term spinal health by encouraging consistent posture correction. The system is scalable, low-cost, and adaptable for educational, professional, and healthcare environments, demonstrating the practical impact of embedded systems and JoT in everyday well ness applications. Keywords: loT, ergonomics, smart chairs, and posture monitoring systems ~- ~ ..... r. r. r:- r.- r, •. r. ·'•..l··~ •) ·..:-·~·..__ . :-- :. ~ - : ~ ~-·· ": ..... -~~- ~-- ,::. :!.:·. :·\!-·. ,¥:i . .::. · Signatu1·e of the Applicant(s) .... .,_. ..... .; "'· -: jJ~. '}, .; ~ .,,, .;. &-.. ·.s.. • ,_.. • ·~ ... r . ~ . .. ...__ .. ._, ·.L- • ·~..J ~- Mr. S~R~VESWARAN S -~ Mr. PRA tNTH S ~r - Mr. A Mrs. .._ ') l ._._ ..... 1 .7 ·-Q) C) Ill D.. Q) -1-- N E.... 0 -LL. M ..... 1.1') N .N... . ..... -::1' 1.1') N 0 ~ N (0 (0 .N... . Ln N 0 ~ . ---------- Name of the Applicants (s) Number of Sheets 1 of I NEW PRINCE SHRI BHA V ANI COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS) Mr. SARVESWARAN S, Mr. PRASANTH S, Mr. ALEX V, Mrs. G.SHEEBA

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122514 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART BED WITH SLEEP MONITORING AND POSTURE DETECTION AND HEALTH MONITORING SYSTEM

(51) International classification	:A61B 5/00, A61B 5/11, A47C 31/12, A47C 31/00, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Mr.A.MADHANKUMAR
5)Ms.S.SIVAKAMI
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2)MR. D. K. KISHORE RAJ
3)Mr.A.MADHANKUMAR
4)Ms.S.SIVAKAMI

(57) Abstract :
ABSTRACT SMART BED WITH SLEEP MONITORING AND POSTURE DETECTION AND HEALTH MONITORING SYSTEM The prevalence of health problems linked to inadequate sleep and bad posture is rising in the fastpaced world of today. Systems that can passively monitor users' health conditions and offer insightful feedback are becoming more and more necessary as smart healthcare technologies gain traction. Sleep is essential for preserving general health, and irregular sleep schedules or bad sleeping posture can result in long-term health issues. This project suggests creating a smart bed that can track important health indicators, identify posture, and monitor the quality of sleep. To track real-time sleep data, the smart bed incorporates a number of sensors, including temperature, accelerometers, pressure, and heart rate sensors. Together, these sensors are able to track the light, deep, and REM phases of sleep, identify the user's body position, and record vital signs like respiration and heart rate. The information gathered aids in the analysis of sleeping patterns and the detection of anomalies that might indicate discomfort, sleep disorders, or underlying medical issues. The sensor data is processed by an embedded microcontroller system, which then outputs the results via a user interface like a display panel or mobile application. The system can automatically adjust the bed's position for greater comfort, warn the user of abnormal vitals, or recommend posture corrections. For example, the bed can raise the headrest a little to improve airflow if the user is snoring or breathing irregularly. The purpose of these features is to offer a customized sleeping experience based on each person's unique health requirements. Data is synced with a cloud or smartphone app using wireless communication modules like. Wi-Fi or Bluetooth. This makes it possible for patients and medical professionals to remotely monitor longterm health and sleep patterns. Through pattern recognition, risk prediction, and intelligent recommendation generation, integration with machine learning algorithms can further improve the accuracy of the system. Because of these features, the system can be used not only at home but also in hospitals, assisted living facilities, and rehabilitation facilities. All things considered, the smart bed is a multipurpose health monitoring tool intended to enhance posture alignment, sleep quality, and the early identification of possible health issues. This project encourages preventive health management and advances smart healthcare solutions by fusing comfort with intelligent monitoring. It provides a useful, approachable method of using technology-driven innovation to improve wellness.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122515 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTEGRATED IOT & AI SYSTEM FOR GANGA RIVER MONITORING

(51) International classification	:C02F 3/32, G01N 33/18, C02F 3/34, C02F 1/00, G06Q 50/26	(71)**Name of Applicant :** **1)NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY** Address of Applicant :NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY(AUTONOMOUS) SANTHOSAPURAM, CHENNAI,TAMILNADU,INDIA. PIN:600073 Tamil Nadu India **2)Mr. VISHAL.M** **3)Mr. JESWANTH.P** **4)Mr.REEPATH.M**
(31) Priority Document No	:NA	**5)Mr. ARAVINDH.M**
(32) Priority Date	:NA	**6)Mrs. SUGANYA.M**
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(86) International Application No	:NA	**1)Mr. VISHAL.M**
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(87) International Publication No	: NA	**3)Mr.REEPATH.M**
(61) Patent of Addition to Application Number	:NA	**4)Mr. ARAVINDH.M**
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(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
ABSTRACT INTERGRA TED lOT & AI SYSTEM FOR GANGA RIVER MONITORING The Ganga River, one of the most sacred and ecologically vital rivers in India, is under severe environmental stress due to industrial discharge, untreated domestic sewage, agricultural runoff, and the growing menace of plastic waste. These pollutants degrade aquatic ecosystems, reduce water quality, and pose significant risks to human health and livelihood. Conventional monitoring approaches are often expensive, manual, and limited in scope, making them unsuitable for large-scale and real-time deployment. To address these challenges, this project introduces an Integrated loT and AI System for Ganga River Monitoring, a low-cost, scalable, and intelligent solution designed for continuous pollution detection, plastic waste identification, and automated alert generation. The proposed system combines IoT-ena~led sensors with artificial intelligence to provide a holistic monitoring framework. Key water. quality parameter pH, turbidity, and Total Dissolved Solids are measured using sensors interfaced with an Arduino Uno microcontroller. The collected data is displayed ori a 16x2 LCD module for local access and analyzed in real time to detect anomalies. When unsafe · thresholds are reached, an alert mechanism is activated: a buzzer generates immediate local . warnings, Bluetooth~based voice notifications update nearby users, and a GSM module sends SMS alerts to. concerned authorities and stakeholders. This ensures rapid awareness and tiinely interventifn. To extend beyon~ sensor-based analysis, the system integrates ,a camera module linked with MATLAB-based image processing. Using AI-drivcn machine vision techniques such as edge detection, contour recognition, and· color segmentation, the system identifies . floating plastic pollutants on the river's surface. This dual approach quantitative sensor analysis. and qualitative image recognition provides a more comprehensive assessmentofriverhealth. Data collected can further be uploaded to cloud storage, enabling long-term trend analysis, AI based prediction of pollution patterns, and · policymaking support. The system design emphasizes affordability, portability, and robustness . · Keywords: loT, AI, Gan.ga River monitoring, water quality, plastic detection, sensors, machine vision, GSM alerts .

No. of Pages : 9 No. of Claims : 7

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(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122516 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT BASED REAL TIME SIGN LANGUAGE TO SPEECH CONVERTER

(51) International classification	:G09B 21/00, G06F 3/01, G06F 3/16, G10L 15/22, A41D 19/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT lOT-BASED REAL-TIME SIGN LANGUAGE TO SPEECH CONVERTER Communication is a very important part of life, but people who cannot hear or speak face many problems when others do not know sign language. To help with this, the loT - based real-time sign language to speech converter is designed as a simple, low-cost, and portable device. It uses a glove with flex sensors that can sense finger movements and gestures. These signals are read by an Arduino Uno, which changes them into predefined words or sentences. The result is shown on a small LCD screen and also spoken through a voice module. With Bluetooth and GSM, the device can connect to a smartphone and also send SMS alerts to family members or caregivers. It runs on a rechargeable battery, making it easy to carry and use every day. Proper sensor setup makes sure the system gives accurate results in different conditions.people with hearing and speech difficulties communicate more easily in schools, hospitals, workplaces, and in their daily life. KEYWORDS .. . .. -.-. ..... • loT-based real-time sign to speech converter • Low-cost, portable, and user-friendly device. • Flex sensors detect finger gestures. • Arduino Uno processes gesture signals. • Output shown on LCD and voice module. • Bluetooth & GSM for phone and SMS alerts. • Rechargeable battery for daily use. • Emergency SOS gesture mode.

No. of Pages : 8 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122517 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI & IOT- POWERED SMART BUOY SYSTEM FOR MARITIME NAVIGATION

(51) International classification	:B63B 22/00, G08G 3/02, G01C 21/20, B63B 22/16, H04W 4/024
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)POUL LOUIS. A
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3)POUL LOUIS. A
4)Dr. G. DURGADEVI

(57) Abstract :
ABSTRACT AI & loT-POWERED SMART BUOY SYSTEM FOR MARITIME NAVIGATION Maritime navigation, especially in inland waterways and coastal zones, faces challenges such as limited visibility, lack of real-time updates, and inefficient manual monitoring systems. To address these issues, this project proposes an AI and loT-powered Smart Buoy System equipped with ESP8266 microcontrollers and LoRa communication modules. The system consists of a network of self-sustaining, low-power buoys that monitor marine traffic, environmental conditions, and navigation hazards in real-time. Each buoy collects critical data including GPS location, wave height, temperature, and vessel proximity, transmitting this information via LoRa to a central base station. The data is then relayed to a cloud-based dashboard accessible to maritime authorities and vessel operators. An AI module processes the collected data, providing predictive analysis to forecast obstacle positions, 'Vessel congestion, and hazardous water patterns, thereby enhancing navigation safety. This 'Smart Buoy System aims to improve maritime traftic management, ensure safer navigation, and provide early warnings for disasters like storm surges and abnormal tides. Powered by ·solar ·energy and equipped with sensors and AI models, the system ·supports coastal and inland waterway monitoring, fishing zone safety, and smart port operations. Keywords: Maritime Navigation, Smart Buoy, AI & loT, LoRa Communication, Coastal Safety Name of the Applicants (s) NumberofSheets I oft NEW PRINCE SHRI BHAVANI COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS) AKASH. H, DHANUSH. M, POUL LOUIS. A, Dr. G. DURGADEVI
No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122518 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT CARDIAC DIAGNOSIS:A HYBRID APPROACH USING FUZZY LOGIC & LIGHTGBM

(51) International classification	:G16H 50/20, A61B 5/00, A61B 5/0245, G06N 7/02, A61B 5/0295
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)N. Kathiravan
4)M ARAVINDH
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3)M. Aravindh
4)S. Kanmani Jebaseeli

(57) Abstract :
INTELLIGENT CARDIAC DIAGNOSIS : A HYBRID APPROACH USING FUZZY LOGIC & LIGHTGBM Cardiovascular diseases are among the foremost causes of mortality worldwide, accounting for millions of deaths each year. Early detection and intervention remain critical in reducing these risks; however, traditional diagnostic approaches often face challenges such as variability in clinical data, reliance on manual image interpretation, and delays in identifying high-risk patients. These limitations result in missed opportunities for timely treatment and effective disease management. To address this gap, this project proposes a hybrid Al-powered diagnostic system that combines the strengths of fuzzy logic and LightGBM (Light Gradient Boosting Machine) to provide fast, accurate, and interpretable predictions for heart disease diagnosis. The proposed system integrates structured clinical features with imaging data (X-ray and ultrasound) to create a comprehensive patient profile. Fuzzy logic handles uncertainty and variability in health indicators, ensuring reliable interpretation of borderline cases. Meanwhile, LightGBM, a high-performance machine learning algorithm, enables rapid classification with minimal false positives and false negatives. Together, they deliver precise diagnostic outcomes, achieving an accuracy of up to 98.9%. A systematic methodology underpins the project: clinical and imaging data are collected, preprocessed, and cleaned to ensure quality; fuzzy logic rules are designed for uncertainty handling; LightGBM is trained on combined datasets; and the system is evaluated and optimized for performance. The outputs are categorized into interpretable risk levels (Low, Moderate, High), equipping healthcare professionals with actionable insights for early and effective intervention. The work plan is structured over six months, progressing from data collection and preprocessing to fuzzy rule design, classifier training, optimization, and final integration of the diagnostic pipeline. The expected outcome is a robust, scalable, and interpretable diagnostic tool that can be deployed in real-world healthcare environments, enhancing doctors decisionmaking and reducing diagnostic errors. *1? By leveraging artificial intelligence, fuzzy logic, and machine learning, the project provides a scalable and cloud-compatible decision support system that empowers doctors, improves accuracy, and ensures timely medical care. This hybrid model has significant potential for adoption in healthcare systems, ultimately contributing to better patient outcomes and reducing the burden of cardiovascular disease worldwide. Keywords: Cardiovascular Disease, Hybrid Diagnostic Model, Fuzzy Logic, LightGBM, Medical Imaging, Artificial Intelligence, Healthcare Decision Support Signatoreri

No. of Pages : 9 No. of Claims : 6

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(19) INDIA
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(21) Application No.202541122531 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AGROASSIST:A SMART AGRICULTURE SYSTEM WITH IOT,VOICE ASSISTANCE,AND CROP YIELD PREDICTION

(51) International classification	:A01G 25/16, G06N 20/00, G10L 15/22, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT AGROASSIST: A SMART AGRICULTURE SYSTEM WITH lOT, VOICE ASSISTANCE, AND CROP YIELD PREDICTION Agriculture is the backbone of human survival, but traditional farming practices are often manual, labor-intensive, and inefficient. With rapid advancements in loT, Artificial Intelligence, and Machine Learning, there is a growing need for smart, automated, and datadriven farming systems. This project presents AgroAssist, a Smart Agriculture System that integrates loT sensors, voice assistants, machine learning, and image processing to modernize farming methods. The system monitors soil moisture, temperature, humidity, light intensity, and rainfall in real-time using sensors, and enables automated irrigation to reduce water wastage and manual effort. A key feature of AgroAssist is its integration with Google Assistant and Alexa, enabling farmers to use voice commands for system updates and irrigation control. The system also employs a machine learning module that predicts crop yield and suggests the most profitable crops to cultivate based on weather conditions, soil data, and market trends. Furthermore, soil quality is analyzed using image processing techniques to determine fertility, texture, and suitability without the need for expensive laboratory testing. KEYWORDS Smart Agriculture, AgroAssist, loT Sensors, Crop Yield Prediction, Machine Learning, Voice Assistant, Google Assistant, Alexa, Image Processing, Automated Irrigation, Sustainable Farming.

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(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122536 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BLOCKCHAIN AND NFT-BASED SOLUTION FOR GENOMIC DATA MANAGEMENT,SHARING AND MONETIZATION

(51) International classification	:G16H 10/60, G16B 50/00, H04L 9/06, H04L 9/32, G16B 50/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
·ABSTRACT Blockchain and NFT-Based Solution for Genomic Data Management, Sharing and Monetization The use of genomic infonnation in precision medicine, prediction of disease and personalized healthcare is becoming increasingly important than ever. But with growth comes ominous challenges-safety of protection of data, anonymity, and claiming ownership. Centralized architectures conventionally employed for the storage and sharing of genomic data are susceptible to data misuse, violations, and openness. As an answer to this, the "Blockchain and NFT-Based Solution for Genomic Data Managemen~, Sharing, and Monetization" presents an open, secure, and decentralized solution to handle sensitive genomic data. In the system, blockchain technology provides immutable storage, open data usage history, and rigorous access controls. Non-Fungible Tokens (NFTs) are applied to label and represent unique individual genomic data sets and restore rightful ownership to data providers. Users can choose whether or not to provide or sell their genetic data under conditions provided in the use ofNFTs, and blockchain offers accountability and immunity to tampering and unauthorized access. Smart contracts fonn the core for authorization automation, governing data sharing rules, and agreement for incentives for monetization. For protection of sensitive data, advanced cryptography techniques such as encryption and secure key management are integrated into the system to comply with global privacy laws such as GDPR and HlPAA. The architecture also provides trusted interaction between individuals, health care organizations, and research institutions-providing medical advancements without sacrificing privacy. Through the integration of blockchain and NFTs, the solution creates an open and secure platform for genomic data. It provides individuals complete ownership of their genetic data and ethical data monetization. The system supports secure cooperation and research by scientists without violating confidentiality. lt creates a foundation for future-proof digital healthcare infrastructure.

No. of Pages : 9 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122541 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ACCIDENT DETECTION FOR ROAD SAFETY USING SMART

(51) International classification	:A42B 3/04, A42B 3/30, G08B 21/02, G08G 1/01, G08G 1/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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3)Mr. Veeravijay M
4)Ms. P. Parveen

(57) Abstract :
ABSTRACT ACCIDENT DETECTION FOR ROAD SAFETY USING SMART HELMET Addressing the growing concerns about road safety, especially for two-wheeler riders, the "Accident Detection for Road Safety Using Smart Helmet" project presents an innovative solution that integrates real-time monitoring, sensor technologies, and loT connectivity. This smart helmet is designed to detect accidents automatically by monitoringthe rider's head movements, impacts, and surrounding conditions. Equipped with sensors like accelerometers and gyroscopes, along with a GPS module, the hdmet continuously tracks the rider's motion and precise location. Upon detecting sudden impacts or abnormal behaviour, the system immediately processes the data and sends emergency alerts to predefined contacts or control centers via the ToT module. The helmet not only provides real-time accident detection but also stores critical data locally, including timestamps, sensor logs, and GPS coordinates. This data can later be used for accident investigation or forensic purposes. The microcontroller manages all operations autonomously, enabling continuous operation without human intervention. Designed to promote safe driving, the system includes audio-visual alerts like buzzers and LED indicators to warn the rider and nearby individuals instantly when a dangerous situation occurs. Its rechargeable battery supports extended operation, ensuring long rides remain fully monitored without interruptions. With loT technology, the helmet allows remote monitoring and control, providing an efficient and scalable solution to enhance road safety. This project aims to significantly reduce emergency response time, improve accident reporting accuracy, and ultimately protect riders on the road. Keywords: Smart Helmet, Accident Detection, Road Safety, loT, Real-Time Monitoring. M ACCIDENT DETECTION FOR ROAD SAFETY USING SMART HELMET WE CLAIM This invention comprises an Accident Detection System for Road Safety Using Smart Helmet, designed to improve rider safety by detecting accidents and sending immediate alerts in real time. 1. Using state-of-the-art technologies, the system introduces a smart helmet capable of monitoring rider behaviour and road conditions, providing rapid accident detection without human intervention. It aims to reduce response time during emergencies 2. The Microcontroller (ESP32 I Arduino) serves as the brain of the system. It collects and processes real-time data from sensors like accelerometer, gyroscope, and GPS, and runs accident detection algorithms to trigger alerts automatically. 3. The GPS Module provides continuous location tracking, enabling precise identification of the rider's position. It sends real-time coordinates to emergency contacts when an accident is detected, allowing for swift assistance. 4. The Accelerometer and Gyroscope Sensors detect sudden impacts or abnormal head movements. Upon detecting an unusual shift in motion, they trigger the accident detection system to act immediately. 5. The loT Module transmits critical data, including accident alerts and GPS coordinates, to cloud servers or emergency contacts via Wi-Fi or GSM networks. This enables remote monitoring and rapid intervention. 6. The Memory Card stores essential data such as timestamps, sensor readings, and location logs. This ensures that the incident details are preserved for later analysis or forensic use.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122551 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SEMI-AUTOMATED PNEUMATIC THERMOCOL CUTTING MACHINE

(51) International classification	:B30B 9/32, B30B 15/16, B26F 3/00, B30B 9/30, B26D 7/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)J PRAVESH
3)V VINU VARSHITH
4)K VISHAAL

(57) Abstract :
7.ABSTRACT OF THE INVENTION The invention relates to a Semi-Automated Pneumatic Thermocol Compression and Cutting Machine employing two double-acting pneumatic cylinders and manually operated 5/2 directional control valves to compress and break bulk thermocol into smaller reusable pieces. The system integrates a rigid frame, compression plate, and vertically guided blade to provide controlled, uniform cutting while reducing manual effort, worker fatigue, and exposure to thermocol dust. The compact, low-cost, and fully pneumatic design ensures reliable operation without sensors or electronic modules, making the machine suitable for small-scale industries, packaging units, recycling facilities, and educational laboratories. The modular construction allows easy maintenance, future scaling, and efficient handling of thermocol waste, enhancing productivity, safety, and reuse of industrial thermocol.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122563 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATIC PNEUMATIC VEHICLE BUMPER

(51) International classification	:B60R 19/20, B60R 19/18, B60R 19/48, B60R 19/02, B60R 21/0134
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. K.G. Ashok
2)Mr. D. George Thamizharasan

(57) Abstract :
AUTOMATIC PNEUMA TIC VEHICLE BUMPER ABSTRACT OF THE INVENTION 5 The invention.discloses an automatic pneumatic vehicle bumper system (101) designed to enhance vehicle safety by actively reducing frontal collision forces through rapid sensing and actuation. The system integrates a pneumatic mechanism (201) and an electro.nic control program (301) operating a double-acting cylinder linked to the bumper assembly (102). An infrared proximity sensor detects obstacles and sends signals to a microcontroller, which activates a 5/2 solenoid I 0 valve to channel compressed air into the cylinder, extending the bumper before impact. This motion increases deformation distance and reduces stress transmitted to the vehicle structure·. Finite-element simulations (401) show improved deformation control and energy absorption -compared to-conventional ourhpers, wliile the working prototype (50 1) confirms accurate sensing, rapid pneumatic response, and stable retraction. The invention provides a lightweight, low-cost, 15 and energy-efficient safety mechanism adaptable for modern and autonomous vehicles, representing a practical advancement in active automotive· safety technology. Total Number of Words: 149

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122591 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN BRAIN TUMOR DIAGNOSIS AND TREATMENT PLATFORM

(51) International classification	:G16H 50/20, G06N 3/08, G06T 7/11, G06T 7/00, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Sindhu M

(57) Abstract :
AI-Driven Brain Tumor Diagnosis and Treatment Platform ABSTRACT OF THE INVENTION This invention presents an advanced artificial intelligence-powered system for brain tumor detection, segmentation, and treatment recommendation using MRI data. The proposed . framework integrates a Mask-RCNN deep learning architecture with a Gemini-based multimodal model to achieve precise tumor localization and personalized therapy guidance. The Mask-RCNN component performs pixel-level segmentation to delineate tumor boundaries with high accuracy, while the Gemini model fuses imaging features with patient-specific clinical parameters such as age, symptoms, and genetic factors to generate tailored treatment suggestions. AI enhances interpretability by identifying influential regions contributing to predictions, ensuring transparency and clinical trust. The system includes a user-friendly dashboard for MRI visualization, treatment planning, and report generation. By combining deep learning, multimodal fusion, and explainable AI, the invention improves diagnostic precision, accelerates decision-making, and supports personalized neurooncology care for better patient outcomes. A user-friendly dashboard enables visualization of segmented tumors, confidence scores, and recommended therapies in real time.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122628 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-BASED SMART MOVIE TICKET BOOKING SYSTEM WITH FLEXIBLE SHOW MODIFICATION

(51) International classification	:G06Q 10/02, G06N 20/00, G06Q 30/06, G06Q 30/02, G06Q 50/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to an Al-powered movie ticket booking system that enables users to conveniently book, modify, or cancel tickets based on their changing schedules. Unlike conventional booking platforms that restrict cancellations and rescheduling, the present invention introduces a flexible system allowing real-time modification of show date, time, and seat allocation through an intuitive interface. The system employs machine learning to predict user preferences, suggest optimal shows, and minimize revenue loss for theatres by dynamically reallocating cancelled seats. Integrated with multiple cinema networks via APIs, the system provides real-time availability, personalized recommendations, seamless refunds, and rescheduling support. This ensures a user-centric, adaptable, and hassle-free movie booking experience.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122629 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ELEPHANT EAR-MIMETIC RADIAL CHANNEL COOLING ARCHITECTURE USING PLA+ FOR PASSIVE ELECTRIC VEHICLE BATTERY HEAT MANAGEMENT

(51) International classification	:H01M 10/6556, H01M 10/625, H01M 10/613, H01M 10/615, H01M 10/6567
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)SETHU ALAGESH KANNAN
4)CHRISH FRANKLIN HOSANA
5)SUDHARSHAN NV
6)THARUNESH NAGARAJAN

(57) Abstract :
his work unveils a non-active temperature management mechanism for lithium-ion battery packs in electric vehicles which consists of a biomimetic cooling shell resembling the structure of IO elephant ears that can disperse heat and is constructed out of PLA+ using 3D printing. The whole system is made up of a cooling shell imitating the structure of elephant ears placed on the sides of a battery casing. This shell consists ofa curved radiative membrane, an internal porous lattice layer and a network of hollow radial channels that encourage buoyancy-driven natural convection, all . integrated into one. The heat coming from the cylindrical cells in the battery pack is transported to X - 15 l^he lattice core, uniformly spreading over the cooling shell, and then getting rid of through surface /radiation and passive airflow through the radial channels, thus allowing fully energy-free operation 'Avithout fans, pumps, or active components of cooling. The monolithic construction of PLA+ 'w hich was created by melted deposition modelling enables the combining of complicated geometries like the asymmetric curvature, triply periodic minimal surface lattices, and branching 20 air conduits in one structure. The invention presents a cost-effective, lightweight, and eco-friendly method of thermal management that can help to lessen temperature differences, prevent the formation of hotspots and keep the temperature at battery modules in EVs more stable.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122630 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART AFLATOXIN RISK DETECTION IN GROUNDNUTS USING AI

(51) International classification	:G06N 3/08, G06V 10/56, G06T 7/00, G06V 10/764, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)SANDHIYA V
3)RUBASRI A

(57) Abstract :
ABSTRACT OF THE INVENTION This invention introduces an innovative Al-based system designed for the early detection of aflatoxin risk in groundnut crops using smartphone imaging and deep learning techniques. By analysing colour, texture, and visual symptoms, the system can identify signs of fungal infection and classify the crop into different risk levels. It provides explainable visual results that help users understand the cause of detected risks. Unlike conventional laboratory testing methods, this approach is non-invasive, real-time, and cost-effective, making it highly suitable for farmers across diverse regions. The integration of Explainable Al (XAI) enhances transparency, allowing users to trust the model's decisions, while cloud connectivity supports large-scale crop monitoring and continuous system improvement. Overall, this invention represents a significant advancement in smart agriculture and food safety, offering an accessible, data-driven, and reliable tool to detect aflatoxin contamination early and reduce economic and health risks associated with infected groundnut crops.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122631 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EXPLAINABLE MULTIMODAL AI FRAMEWORK FOR REMOTE DEMENTIA MONITORING AND EARLY DETECTION

(51) International classification	:G16H 50/20, A61B 5/055, G06N 3/04, G06N 3/08, G06V 10/764
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to an explainable multimodal Al framework for early detection 10 and remote monitoring of dementia by integrating brain MRI scans, clinical information, and speech features. MRI images are processed using convolutional neural networks to extract deep visual features, clinical records are structured into numerical vectors, and speech data is analyzed to capture temporal patterns. These multimodal features are fused and classified using the XGBoost algorithm to predict 15 dementia stages with improved accuracy. An explainability module based on Gradient-weighted Class Activation 'Mapping (Grad-CAM) highlights critical MRI regions' and key contributing factors, thereby enhancing clinical trust and interpretability. The system is deployed as a Flask-based web platform with SQLite storage, enabling remote patient data upload and clinician access. Cognitive 20 assessments, including memory games and speech tasks, support non-real-time monitoring. The invention ensures interpretability, scalabity, and usability, advancing dementia"detection and healthcare delivery.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122632 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MODIFICATION OF EXISTING REFLECTORS FOR THE MAINTENANCE OF LANE DISCIPLINE

(51) International classification	:E01F 9/619, E01F 9/00, E01F 9/559, E01F 9/623, E01F 9/011
(31) Priority Document No	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Manoj R
3)Kumutha P V
4)Mohammed Faizur Rahman Y
5)Rathik A

(57) Abstract :
The present invention pertains to advancements in utility road reflectors 8 designed to actively assist drivers' in maintaining proper lane discipline. 9 Traditional reflectors primarily function in a semi-passive manner, providing 10 visual guidance under low-light conditions. This invention retains the 11 reflective feature while introducing a modified design that incorporates tactile 12 and/or auditory feedback mechanisms to alert drivers when they cross or 13 encroach upon lane markings. These enhancements may include elevated or 14 . textured surfaces, vibration-inducing materials, or integrated components that 15 generate a rumble effect when driven over. In certain embodiments, the 16 reflectors may also feature motion-sensitive elements or pressure-17 activated switches that trigger light or sound upon contact. Such real-time 18 alerts provide instinctive feedback to drivers, thereby reducing the risk of 19 unintentional lane departures or accidents caused by inattentiveness, 20 distraction, or limited visibility. The invention offers a low-cost, easily 21 retrofittable solution that can be integrated into existing road systems 22 without major modifications. It is particularly beneficial for highways, curved 23 sections, intersections, and other high-risk zones prone to accidents due to 24 poor lane discipline. By combining visual, tactile, and auditory cues, the 25 26 27 28 29 30 proposed system enhances both the sensory and functional aspects of road markings.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202541122633 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MULTILINGUAL MOBILE APPLICATON FOR REDUCING LEAD TIME IN MSME SUPPLY CHAINS

(51) International classification	:G06Q 30/00, G06Q 30/08, G06Q 10/08, G06Q 30/06, G06Q 10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)JERUSHA M
2)MAALINI E
3)JAYASHREE R
4)Dr.Seena V P

(57) Abstract :
This project proposes a low-cost mobile application that significantly reduces lead time by streamlining interactions among manufacturers, suppliers, retailers, and other intermediaries through a dynamic bidding and procurement system. Manufacturers can post their requirements, allowing multiple suppliers to place competitive bids. The supplier whose offer best meets the criteria-such as price, delivery schedule, and quality-secures the order. The platform also enables retailers and intermediaries to buy or sell goods, ensuring broader participation across the supply chain. Retailers can track their inventory levels, and when stock is low, place orders directly from the nearest warehouse, enabling faster delivery and minimising downtime. Along with this, an integrated Al-based sensory system monitors inventory in real time and issues automated alerts for restocking, helping businesses maintain optimal stock levels. Designed to be inclusive and user-friendly, the app supports multiple local languages, making it accessible to users across diverse regions. This solution empowers MSMEs and enhances overall supply chain efficiency.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122634 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REAL-TIME HEALTHCARE MONITORING AND EMERGENCY RESPONSE SYSTEM USING IOT SENSORS AND VEHICULAR NETWORKS

(51) International classification	:G16H 40/67, G16H 40/20, H04L 29/08, H04W 4/90, H04L 67/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)A. Bhagya Lakshmi
2)Jaganathan J
3)Mohin Kumar V S
4)Prasanna Sai Kumar R

(57) Abstract :
RetCareNet is a real-time precision healthcare system that combines IoT wearable sensors, VANET communication networks, and RetNet-based analytics for emergency medical services. The system continuously 10 monitors, patient vitals through IoT devices. It sends data through VANET- enabled ambulances using the AODV protocol. It also processes information with RetNet for precise anomaly detection. Multi-Agent Deep Deterministic Policy Gradient algorithms manage hospital resources in realtime. The system achieves 97% diagnostic accuracy and 45-minute 15 | response times. It also has 95% resource use and 120 ms communication f delays. This performance is far better than traditional emergency £ healthcare systems. It provides secure, scalable, and efficient coordination of medical care.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122648 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : COLLEGE MANAGEMENT SYSTEM

(51) International classification	:G06Q 50/20, G06Q 10/10, G06Q 10/06, G06F 17/30, G06Q 10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)C .NAVAMANI
2)J.DINESH
3)P. CHANDRU
4)S.HARIHARAN

(57) Abstract :
7.ABSTRACT OF THE INVEN FION [0014] The present disclosure describes a unified academic management platform that brings together the operations of students, parents, teachers, and administrators inside a single digital environment. The Unified College Management System (UCMS) rrtaintains all core academic information�including attendance logs, internal and external marks, subject credits, course timetables, user profiles, semester records, announcements, and approval histories� within a shared institutional database. Centralized storage ensures that academic transactions remain synchronized across all modules, preventing outdated or inconsistent entries that commonly arise when institutions depend on separate tools. Each user interacts through a dedicated module linked to the same backend services, allowing updates to be processed with structured validation. When attendance, marks, or schedule-related information is recorded or approved, the system instantly jeflects the changes across all modules, ensuring reliability and reducing repeated work. Teachers benefit from reduced duplication of entry, parents receive clear and timely updates, and students gain immediate access to accurate academic progress. Administrators retain oversight of departmental activity, manage approval workflows, and maintain full traceability of system changes. By consolidating record creation, updates, notifications, and monitoring into a single operational environment, UCMS enhances academic coordination, establishes consistent record-keeping, and supports smooth, efficient handling of institutional activities.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122653 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GEO-FENCING TRACKER AND SURVEILLANCE SYSTEM

(51) International classification	:H04W 4/021, H04W 4/90, H04W 4/029, H04W 4/40, H04L 29/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)K Shankar
2)Arjun Sathish A S
3)Ashwin P M
4)Hari Prasath B

(57) Abstract :
GEO-FENCING TRACKER AND SURVEILLANCE SYSTEM I ABSTRACT OF THE INVENTION The proposed Geofencing Tracker and Surveillance System is a realtime location monitoring and boundary alert framework designed to track movable entities such as vehicles, individuals, or livestock. The system utilizes a GPS module to acquire continuous positional data, which is processed by an ESP32 microcontroller to determine whether the tracked device remains within predefined geofenced boundaries. Upon detecting an entry or exit event, the system transmits instant notifications to authorized users through GSM-based SMS communication. A web-based dashboard built using Leaflet enables users to visualize device movement, create and edit geofenced zones, and review location logs. The system achieves high tracking accuracy, low-latency alert generation, and reliable outdoor performance. It offers a scalable, low-cost, and secure solution for surveillance, safety monitoring, and asset management across agricultural, transportation, industrial, and personal security applications. CD ��) re Q. CD Number of words: 145 words

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2025
(21) Application No.202541122880 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENERGY OPTIMIZATION IN REFRIGERATION SYSTEMS

(51) International classification	:F25B 9/00, F25B 1/00, F25B 49/02, F25B 27/00, F25B 41/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)JOULESHIFT LLP
(72)**Name of Inventor :**
1)SESHADRI, Satyanarayanan
2)KANERIA, Pradyum
3)SAKETH, Kadali Krishna

(57) Abstract :
ABSTRACT ENERGY OPTIMIZATION IN REFRIGERATION SYSTEMS A heat removal device (110) for a refrigeration system (100) is disclosed. The heat removal device (110) includes a heat sink assembly (200) with 5 a first plate (206) and a second plate (208) that couple to form a hollow sleeve (210). The sleeve defines a cavity (212) that receives a portion of a discharge line (108) and contains a phase change material. One or more heat pipes (202) are thermally coupled to the heat sink assembly (200). The heat removal device (110) includes a plurality of fins (204) that reject 10 heat to an external environment (114). The refrigeration system (100) includes a compressor (106), a condenser (112), an insulated compartment (102), a temperature sensor (120) in a propylene glycol solution, and a temperature controller (122). The temperature controller (122) operates the compressor (106) using data from the sensor (120) to 15 improve pull down and reduce energy consumption.

No. of Pages : 33 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123384 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS GROUND- BASED AI-GUIDED LASER SEVERING AND CONTROLLED DESCENT CAPTURE SYSTEM FOR HIGH-CANOPY CROP HARVESTING

(51) International classification	:A01D 34/00, G05D 1/02, A01D 46/30, A01D 46/26, A01D 41/127
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. SHRIRAM K V
2)SINI RAJ PULARI
3)SUBASHRI V
4)Dr.VIMALS
5)INDU M URGESAN

(57) Abstract :
This invention relates to an autonomous ground-based Al-guided laser severing and controlled descent capture system for high-canopy crop harvesting. It typically includes a ground-based support structure (1), an ai-driven vision module (2), a central io control unit (3), a motorized orientation mechanism (4), a precision laser severing module (5), a trajectory prediction unit (6), an environmental sensor (7), a controlled- descent capture mechanism (8), a safety interlocks system (9), a power management and control system (10). This invention offers unparalleled safety by eliminating manual climbing, ensures zero-damage harvesting through controlled descent, and is provides high-precision, scalable automation via Al-guided laser technology for tailtree crops. This system encompasses agricultural harvesting of diverse high-canopy fruits, precision pruning and removal of diseased branches in forestry, and industrial remote cutting of cables or debris in hazardous environments where human access is unsafe.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123385 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED TRAFFIC VIOLATION DETECTION AND SEMANTIC INCIDENT MANAGEMENT

(51) International classification	:G06V 20/62, G06V 30/10, G06K 9/00, G06V 10/764, G08G 1/017
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)S R NITTHIN KUMAR
3)PRAVEEN KUMAR R
4)ARUN NIVESH S

(57) Abstract :
This invention relates to an Al-powered traffic violation detection and semantic incident management. It typically includes a video preprocessing (1), a YOLO-based violation detection model (2), a license plate recognition (OCR) pipeline (3), a semantic io metadata generation module (4), a context-aware semantic search engine (5), a web interface and validation dashboard (6), and a data archival unit (7). The system's ability to autonomously detect multiple real-time traffic violations and enable naturallanguage semantic search of evidence significantly enhances enforcement efficiency and road safety on low-resource edge systems. The system's applications include is real-time law enforcement, smart city traffic management, criminal investigation support, and automated public safety monitoring by providing searchable violation evidence.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202541123386 A

(19) INDIA

(22) Date of filing of Application :08/12/2025

(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART ASSISTED DEVICE FOR BED PATIENT DIAPERING AND POSITIONING

(51) International classification	:A61G 7/05, A61G 7/015, A61G 7/057, A61G 7/10, A61G 7/075
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
This invention relates to the design and development of a smart assisted device for bed patient diapering and positioning, it typically includes a base platform (1), a left curved hone (2), a right curved hone (3), a straight middle hone (4), a deployment springs (5), a primary locking latch (6), a release lever (7), a secondary locking ratchet io (8), a retraction release button (9), a hone pivot joints (10), a soft contact pads (11), and an anti-slip base material (12). This invention reduces manual lifting and caregiver strain by mechanically supporting and rotating the patient's legs, allowing for safer, easier, and more dignified single-person hygiene tasks. This invention is used in hospitals, nursing homes, and home care environments to efficiently assist with patient 15 diapering, wound care, and general lower body repositioning.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202541123387 A

(19) INDIA

(22) Date of filing of Application :08/12/2025

(43) Publication Date : 06/02/2026

(54) Title of the invention : ATTACHABLE THERMO-ELECTRIC COOLING SEAT ASSEMBLY FOR VEHICLES

(51) International classification	:B60N 2/56, B60H 1/00, A47C 7/74, B60H 1/32, F25B 21/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
The invention provides an attachable cooling seat assembly for vehicles that improves comfort in warm conditions. A flexible seat panel (1) contains water jackets (2) that circulate chilled liquid supplied through an inlet (3). Warm liquid exits through an outlet (4) and returns to a storage tank (6). A thermoelectric cooling unit (5) lowers the liquid 10 temperature before recirculation. A pump (8) maintains continuous flow through the jackets. A power supply port (7) enables operation using the vehicle outlet. The assembly delivers controlled cooling without modifying the original seat.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202541123388 A

(19) INDIA

(22) Date of filing of Application :08/12/2025

(43) Publication Date : 06/02/2026

(54) Title of the invention : CONFIDENTIAL FILES STORAGE CABINET WITH REMOTE ACTIVATED AUTHENTICITY RELEASE LOCK

(51) International classification	:G07C 9/00, E05B 49/00, E05B 47/00, A47B 63/00, E05B 65/52
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
The titled invention discloses a confidential files storage cabinet with remote activated authenticity release lock to provide secure, controlled access to sensitive documents. The cabinet comprises multiple file storage racks (1) housed within a cabin enclosure (1), each secured by an internal magnetic latch lock (11). An access verification io module positioned on the cabinet includes a keypad (6), biometric sensor (8), and LCD display (7), enabling multi-factor on-site authentication. The system incorporates an loT interface (10) and remote antenna (9) to allow a primary authorized user to transmit a digital key through a mobile application when off-site. Upon receiving the digital key, the cabinet validates the secondary user's access code and biometric identity before is unlocking the designated rack. This dual on-site and remote authentication framework ensures enhanced security, rack-spec

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202541123389 A

(19) INDIA

(22) Date of filing of Application :08/12/2025

(43) Publication Date : 06/02/2026

(54) Title of the invention : DENTALS SPECIMEN STORAGE CABIN WITH DIGITAL INTEGRATED PATIENT IDENTIFICATION AND TRACKING

(51) International classification	:A61C 19/02, A61C 19/04, A61B 10/00, A61C 19/00, A61B 6/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**

1)Dr.S. SHASI ANAND

2)Dr. P. JAYAKUMAR

(57) Abstract :

The titled invention discloses a dental specimen storage cabin with a digital patient identification and continuous slot-tracking system designed to hold and locate patient tooth reference specimens safely, quickly, and without mix-up errors. The system comprises a closed dental specimen storage cabin (1) support by bush at base (10) carrying tooth storage slots (2), with each slot fitted with a rear-aligned barcode io scanner (4) facing the barcode identity label (3) fixed on each specimen. The microcontroller board (7) inside the cabin powers all barcode scanner (4), receives scanned slot-code data continuously, and updates patient names next to correct slot numbers instantly on the front LCD touch screen (6) display. When a clinician selects a patient name on screen (6), a trigger signal from microcontroller (7) illuminates the 15 matched tooth location indicator light (5), guiding the user to the exact slot. Slot-swap or wrong placement of specimens is corrected automatically on screen using live barcode readings from slot scanner (4). The transparent fiber-glass lid (8) with handle grip (9) ensures protection from dust impurities, while! maintaining barcode visibility. This system activated by control panel (11) reduces searching time, improves clinical 20 handovers, and maintains reliable specimen organization in dental clinics and labs.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202541123390 A

(19) INDIA

(22) Date of filing of Application :08/12/2025

(43) Publication Date : 06/02/2026

(54) Title of the invention : TEMPORARY MOVABLE BARRICADE WITH WIDTH ADJUSTABLE RETRACTABLE BARRIER ARM FOR VEHICLE ACCESS CONTROL

(51) International classification	:E01F 13/04, E01F 13/06, E01F 13/12, E01F 13/00, E04H 6/42
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**

1)Dr.S. SHASI ANAND

2)Dr. P. JAYAKUMAR

(57) Abstract :

The titled invention discloses a temporary, movable barricade for adjustable vehicle access control and features a unique three-cabin design with a left (1) and a right (3) 5 fixed barrier cabin, and a movable central barrier cabin (2) positioned between them. The central cabin (2), mounted on a wheeled base (6, 7), is remotely controlled to travel laterally, adjusting the entrance width. A flexible, chain-linked barrier arm (10), stored, on a motorized winding drum (9) in the right cabin (3), extends and retracts to connect to the central cabin (2). An electronic interface (15) synchronizes the io movement of the central cabin with the extension/retraction of the barrier arm. A distance sensor (8) ensures precise positioning to create gaps for either pedestrian or wide vehicle access. The entire system is powered, by solar panels (4), enabling quick, temporary, and self-sufficient deployment for versatile entrance management.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/12/2025

(21) Application No.202541123391 A

(43) Publication Date : 06/02/2026

(54) Title of the invention : RETRACTABLE FLIP DOWN BARRIER DEVICE FOR SELECTIVE RESTRICTION OF VEHICLE ACCESS CONTROL

(51) International classification	:E01F 13/04, E01F 13/06, E04H 6/42, E05F 15/632, E01F 13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr.S. SHASI ANAND

2)Dr. P. JAYAKUMAR

(57) Abstract :

he invention relates to a retractable flip-down barrier device for regulating vehicle 5 entry through a controlled passage. The device includes a left wall base (1) and right wall base (2) anchored by a floor clamp (4) to support a flipping wall (8) on a wall axle (10) driven by a wall motor (9). A flipping barrier (11) mounted on a barrier axle (13) and powered by a barrier motor (12) forms the primary blocking element. A solar panel (5) supplies charging energy to the control system. A human entry passage (6) is io maintained beside the vehicle passage (7) for safe pedestrian movement. A speed bump (14) guides vehicles toward controlled movement. A hand held remote (15) communicates with a receiver (16) to activate opening and closing actions.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123393 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TEMPORARY STAIRCASE RETRACTABLE FLYOVER FOR TRANSFERING WHEEL CHAIR

(51) International classification	:A61G 5/06, A61G 3/06, A61G 5/10, B66B 9/08, A61G 7/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. P. JAYAKUMAR

(57) Abstract :
The titled invention discloses a temporary staircase retractable flyover for transfering wheel chair to safely transfer a wheelchair user along the staircase. The system includes a wheelchair loading deck (1) supported by a scissor-actuated lifting mechanism (6) powered by a hydraulic cylinder (7), enabling smooth and stable vertical movement. Integrated safety features such as wheel stabilization slots (2), lockable lateral guard rails (3), and siderails (4) ensure secure positioning of the wheelchair during operation. A wall-mounted traversing deck (10) allows horizontal movement once the loading deck (1) reaches staircase level. The wheelchair traversing deck (10) is supported by adjustable telescopic legs for proper alignment with varying stair dimensions. The foldable structure and remote-controlled operation further enhance convenience, safety, and space efficiency. This system provides an effective accessibility solution for transporting wheelchair users between different staircase levels.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123394 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE FIRE PROOF INDUSTRIAL GARMENT WITH WATER FILLED KNEE PAD FOR PRESSURE ABSORPTION AND ABRASION RESISTANCE

(51) International classification	:A41D 13/06, A41D 13/05, A62B 17/00, A41D 13/00, A41D 31/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
The titled invention discloses a wearable fire proof industrial garment with water filled knee pad for pressure absorption and abrasion resistance. The waist garment (1) forms the wearable base, lined internally with a waist insert (3) for fit stability and secured using a waist belt (4) that prevents displacement during motion. Fire proof cloth (2) is fixed across the waist garment (1) as a continuous stitched layer, delivering steady heat and spark defense while keeping bending unrestricted. A built-on knee pad assembly (5) sits at both knees and houses sealed water jackets (6). Water is loaded through the water fill inlet (7) and sealed by tightening the locking knob (8), forming a suspended water filled hump (10) inside the pad zone. Under kneeling pressure, the hump (10) reallocates force outward using fluid shift, softening impact and shielding garment fibers from abrasive floor contact. After use or before washing, the drain valve (9) releases water from the jackets without removing the knee pad assembly (5). This wearable garment stays aligned without straps, reduces knee stress, blocks heat conduction from work floors, limits fabric wear, and restores cushioning instantly after refill.

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123395 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GRAVITY RESET MOISTURE RESPONSIVE CLOTHES DRYING RACK

(51) International classification	:D06F 57/12, D06F 57/00, D06F 57/08, D06F 57/10, D06F 57/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
The titled invention relates to a wall-mounted clothes drying rack that resets automatically as moisture reduces. The rack includes a mounting bracket (1), a pivot arm (2) and a rack frame (4) supported by a counterweight assembly (3). A moisture- responsive linkage (5) activates a latch mechanism (6) to hold or release the rack based on drying progress. A pivot joint (7) and return spring (8) guide smooth rotation. 10 A guide channel (9) maintains alignment. A structural housing (10) protects the mechanism while enabling compact automatic retraction

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123396 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI STATION FOOTWEAR SOLE CLEANER WITH TARGETED ACTIVATION CLEANING ZONE

(51) International classification	:A47L 23/22, A47L 23/26, A47L 23/02, A47L 23/24, A47L 23/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
The titled invention discloses a multi station footwear sole cleaner with targeted activation cleaning zone provide efficient, automated, and energy-efficient cleaning. The device comprises a movable base (4) with wheels (5) for easy relocation, an end frame (2) housing the cleaning mechanisms, and a partition frame (3) that divides the io cleaning area into multiple independent zones. Each sole cleaning zone (1) is equipped with rows of rotary brushes (7) surrounded by horizontal rotary bristles (10) to remove dirt from footwear soles. Pressure sensors (11) embedded in each zone detect foot placement and activate only the brushes in the occupied zone, ensuring targeted cleaning and reduced power consumption. Drive motors (8) transmit 15 rotational motion through brush rotary axles (9), while dust collecting trays (13) capture debris. An electronic interface (1.2) controls the operation of sensors and motors, and a power supply panel (6) provides the necessary electrical power. The invention offers a user-friendly, maintenance-friendly, and hygienic solution suitable for hospitals, industrial facilities, and public spaces.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123397 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CONVERTIBLE TRACTION MOTOR DRIVE TO AUTOMATE FOLDABLE WHEEL CHAIR PROPULSION

(51) International classification	:A61G 5/08, A61G 5/10, A61G 5/04, A61G 5/02, A61G 5/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
The titled invention discloses a convertible traction motor drive system developed for foldable manual wheelchairs to automate their propulsion, giving users an easier path to powered movement without depending the caregivers or required in case of fully disabled person. The system forms a single assist unit built with traction wheels (1) 10 mounted on a traction wheel axle (12), driven by a small drive motor (10) paired with a gear box (11) and enclosed inside a drive holding enclosure (2). A central axle (4) passes through a central axle supporting hub (3) fixed on the enclosure (2) and is secured using a central axle locking clamp (8), holding both sides of the drive in steady alignment The mid-section of the axle (4) carries an extensible column (5) whose is width is set by turning the knob of an extension axle locking hub (9), allowing the system to match the side-to-side length of different folding wheelchair frames (13). The wheelchair axle holding hub (6) clamps onto the existing rear axle rod of the wheelchair, and its locking joints (7) tighten against the axle surface to prevent twisting or side drift when the assist unit pulls the chair. The assist drive runs on a rechargeable 20 battery pack and is controlled wirelessly using a hand-held remote device (14) for starting, stopping, and adjusting motion. The complete unit is quick to mount, simple to remove, and designed to be economical for users seeking a practical and affordable conversion from manual push to smooth automated pull for everyday travel.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123398 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED SECURITY SYSTEM FOR DETECTING AND IDENTIFYING PATHWAY INTRUDERS IN A DESIGNATED AREA

(51) International classification	:G08B 13/196, G08B 25/00, H04N 7/18, G08B 13/00, G08B 15/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
The titled invention discloses an automated, solar-powered security system for covert intrusion detection and identification and employs a network of piezoelectric pressure sensors (1) concealed beneath a pathway flooring in a strategic, distributed 10 arrangement. Upon detecting pressure from an intruder's footstep, the sensors generate a signal which is aggregated and processed by a microcontroller interface (3). Following validation of the intrusion event, the microcontroller (3) triggers a specific imagecapturing camera (4) from a low-power standby state to capture the intruder's image. The captured identity data, along with relevant metadata, is then transmitted via an loT 15 interface (5) to a remote control room for immediate alerting of an observer. The entire apparatus is autonomously powered by a solar panel (107) and battery subsystem, enabling off-grid deployment. The invention integrates concealed sensing, event- triggered response, and sustainable energy to provide a reliable, energy-efficient, and intelligent perimeter security solution.

No. of Pages : 19 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123401 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : OMNIDIRECTIONAL PORTABLE INFORMATION DISPLAY SYSTEM WITH THREE AXIS ARTICULATED ARMS

(51) International classification	:G09F 9/00, F16M 11/42, G06F 1/16, F16M 11/12, F16M 11/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
ABSTRACT TITLE: OMNIDIRECTIONAL PORTABLE INFORMATION DISPLAY SYSTEM WITH THREE AXIS ARTICULATED ARMS The titled invention discloses an omnidirectional, adjustable information display system utilizing a set of three-axis articulated arms to provide enhanced visibility of displayed content in dynamic public environments. The system comprises a movable base (1) equipped with wheels (2) for easy repositioning, a rotary base(4) enabling 10 360-degree horizontal rotation, and a horizontal swivelling arm(5) extending from the rotary base. A vertical extendable column(6) allows height adjustment, while a shoulder swivelling arm (7) provides angular positioning of the display. A wrist rotary hub (8) allows the display to tilt about its axis for precise orientation. The system permits the display panel to be adjusted freely in three-dimensional space, ensuring 15 clear visibility to. viewers approaching from any direction. A hand-held remote (10) and onboard control interface (11) allow operators to modify the display angle and orientation without direct physical contact. The portable structure enables rapid deployment and repositioning, offering an efficient and flexible soluti.on for real-time information dissemination in high-traffic areas.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123402 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DYNAMICALLY CONTROLLED, SELF-SANITIZING PATIENT POSITIONER WITH INTEGRATED SAFETY FEEDBACK

(51) International classification	:A61B 19/00, A61B 5/00, A61L 2/24, G07F 17/32, A61L 2/28
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.S. SHASI ANAND
2)Dr. P. JAYAKUMAR

(57) Abstract :
ABSTRACT Title: A DYNAMICALLY CONTROLLED, SELF-SANITIZING PATIENT POSITIONER WITH INTEGRATED SAFETY FEEDBACK 5 This invention relates to the design and development of a dynamically controlled, selfsanitizing patient positioner with integrated safety feedback. it typically a base platform (1) , a left segmented hone (2), a right segmented hone (3), a straight middle hone (4), a deployment springs (5), a primary locking latch (6), a release lever (7), a secondary locking ratchet (8), a retraction release button (9), a hone pivot joints (1 0), a lateral 10 translation mechanism (11), a curvature adjustment lock (12), a pressure sensors (13), a coin-cell battery (14), a visual feedback indicator (15), a sensor wiring (16), an antimicrobial soft contact pads (17), an anti-slip base material (18), and an antimicrobial frame material (19). This invention offers superior, customizable, and safe patient handling by integrating adjustable support mechanics, active pressure 15 feedback, and continuous hygiene via antimicrobial surfaces. This invention is applied across intensive care units, long-term care facilities, and home healthcare settings for customizable, injury-preventing repositioning, wound care access, and maintaining optimal hygiene for bedridden patients.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123417 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MARINE COLLAGEN-RED ALGAL HYBRID PATCH FOR DIABETIC FOOT ULCERS MANAGEMENT

(51) International classification	:A61L 15/32, A61K 38/39, A61L 27/24, A61K 9/70, A61L 15/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr.K.REKHA
3)Dr.SHINY CHRISM QUEEN NESAN.G
4)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Abstract Marine Collagen-Red Algal Hybrid Patch for Diabetic Foot Ulcers Management The present invention relates to a marine collagen-red algal hybrid wound-healing patch designed for the therapeutic management of diabetic foot ulcers (DFUs) in elderly patients. The patch integrates marine collagen, which provides a porous scaffold for cellular proliferation and tissue regeneration, with red algal bioactive components that exhibit antimicrobial, antioxidant, and anti-infhimmatory properties. This synergistic combination promotes accelerated wound healing by enhancing angiogenesis, reducing microbial colonization, and maintaining optimal wound moisture. The hybrid patch is fabricated as a flexible, biocompatible . dressing .that adheres to the ulcer surface, ensuring sustained bioactive delivery and improved healing outcomes compared to conventional dressings. The invention offers a cost-effective, safe, and non-invasive solution for the treatment of DFUs, thereby reducing complications, recurrence, and risk of amputation in elderly diabetic populations.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123418 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PRECISION IN PRACTICE : THE CLINICAL UTILITY OF EXTENDED MANUAL LEUCOCYTE COUNTING

(51) International classification	:G01N 33/49, G01N 33/48, G01N 15/14, G01N 1/30, G01N 33/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)DR.N.SRUTHI
2)DR.SONTI SULOCHANA
3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Abstract The invention provides a precise and reproducible method for extended manual leukocyte counting in clinical hematology. It enables accur~te identification of standard leukocyte subtypes-neutrophils, lymphocytes, monocytesJ eosinophils, and basophils-along with atypical and inm1ature fom1s such as blasts, prorrtyelocytes, myelocytes, metamyelocytes, plasma cells, and reactive lymphocytes. The prodess integrates peripheral blood smear preparation, Romanowsky-type staining, and midroscopic examination at high magnification, followed by category-specific tallying using a m~nual or electronic counter. Total leukocyte counts are obtained via hemocytometer and comfuined with differential-~ounts to calculate absolute values. Precision is ensured through rep~atability, inter-observer reproducibility, coefficients of variation, and quality control agai~st reference samples 2nd automated analyzers. This extended system functions as both a diagnostic and contirmatory tool,I offering enhanced detection of abnormal cells often overlooked by automation. Particularly I beneficial for hematological disorder diagnosis, therapy monitoring, and resource-limited settings, the invention delivers reliable, traceable~ and clinically actionable hematology data.

No. of Pages : 9 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123419 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MOUTHWASH PREPARATION USING GLORIOUS SUPERBA MEDIATED SILVER NANOPARTICLES AND THIOCOLCHICOSIDE

(51) International classification	:A61Q 11/00, A61K 8/97, A61K 8/49, A61K 8/60, A61P 31/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Renu Vajjiravelu
3)Santhoshkumar Jayakodi
4)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Abstract The present invention relates to a novel herbal-based antimicrobial mouthwash formulation incorporating Gloriosa superba-mediated silver nanoparticles (AgNPs) and Thiocolchicoside for effective oral hygiene management. The invention utilizes the aqueous or ethano lie extract of G. superba tubers or leaves as a bio-reductant and stabilizing agent for the eco-friendly, green synthesis of AgNPs. The biosynthesized AgNPs exhibit potent antimicrobial, antifungal, and anti-biofilm activities against a wide spectmm of oral pathogens, including S. aureus. S. mutans, C. albicans, and E. faecalis by using the agar well diffusion method. The plant extract's phytoconstituents, such as colchicine, gloriosine, and various flavonoids, enhance nanoparticle stability and synergize with silver's antimicrobial action. The mouthwash formulation is alcoholfree, non-irritating, and suitable for daily use. It provides rapid plaque inhibition, reduces gingival inflammation, neutralizes oral malodor, and aids in the prevention of dental caries and periodontitis. The invention addresses limitations of conventional mouthwashes, such as high alcohol content, synthetic chemical exposure, and resistance development. The method of preparation includes the extraction of Glorious superba, synthesis and characterization of AgNPs via UV-Vis, FTIR, XRD, and TEM, followed by incorporation into an optimized aqueous base with flavoring agents, pH stabilizers, and humectants. The resulting product shows enhanced shelf stability and sustained antimicrobial release. Cytotoxicity assays confirm biocompatibility with oral epithelial cells at effective concentrations. The invention provides a sustainable, costeffective, and multifunctional oral care solution derived from natural resources, promoting both oral and systemic health while minimizing environmental impact from chemical manufacturing.

No. of Pages : 10 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123420 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IRON OXIDE NANOPARTICLES GEL USING MOMORDICA CHARANTICA LEAVES AGAINST WOUND PATHOGENS

(51) International classification	:A61P31/04, A61K9/06, A61K33/26, C01G49/02, C01G49/08, C01G49/06, A61K36/42, A61P17/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)SULOCHANA GOVINDHARAJ
2)RAJESHKUMAR SHANMUGAM
3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Abstract The present study reports a green synthesis procedure for iron oxide narioparticles (Fe20JNPs) from aquatic Momordica charantia leaf extract, a medicinal herb with proved pharmacologically active. The Fe20JNPs gel were prepared and characterized by standard physicochemical techniques to ensure their ·formation and stability. In vitro biomedical evaluations were conducted to establish their anti-microbial activity and antibiofilm activity against wound pathogens in E. coli, S. aureus, Pseudomonas sp. E. faecalis, and Actinobacter sp .. The nanoparticles based gel exhibited outstanding inhibitory zone in antimicrobial activity The Fe20JNPs gel exhibited moderate antibiofilm activity against wound patho-gens:-The-results-implicated-that-M.-charantia-mediated--Fe2QJNFs-gel-exhibit-multifunctionaL ___ bioactivities, towards their application as eco-friendly nanotherapeutic agents to wound infectious disease. Mechanism of action and in vivo efficacy studies need to b.e assayed in future research.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123421 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NANOHYDROGEL FOR WOUND HEALING POTENTIAL :A POLY-HERBAL MEDIATED MAGNETIC NANOPARTICLES PRODUCT

(51) International classification	:A61P31/04, A61P17/02, A61P29/00, B82Y5/00, B82Y30/00, B82Y40/00, A61K36/53, A61K36/19
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)RAJESHKUMAR SHANMUGAM
3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Abst.-act Background: In green synthesized nanoparticles, plant part extract has been used as a reducing agent for the synthesis different nanoparticles. In magnetic nanoparticles, iron oxide nanoparticles have individual magnetic, reactant, biological, and other resources, which were utilized for specific biological and other technical applications. Polyherbal formulation is a traditional medicine used for various treatments such as stomach problems, wound healing activity, respiratory disorders, inflammation, and urinary disorders. Aim: The goal of the research work, is to evaluate biomedical applications whereas antioxidant, antiinflammatory, antimicrobial activity, cytotoxic, and embryonic toxicology effects against Polyherbal formulation mediated magnetic nanoparticles. Materials and. method: The Polyherbal formulation mediated magnetic nanoparticles, to evaluate the antimicrobial activity using agar well diffusion technique, time kill curve assay, and various antiinflammatory assays. Then antioxidant activity using nitric acid, ABTS, FRAP, H202, and DPPH assay, cytotoxic effect using brine shrimp lethality assay, and embryonic toxicology effect using zebrafish embryos. Result: Polyherbal formulation mediated magnetic nanoparticles have excellent antioxidant and antiinflammatory properties, and they showed exceptional antimicrobial activity against wound pathogens, especially inS. aureus and E. faecalis. The magnetic nanoparticles showed less toxicity. Conclusion: The green synthesized magnetic nanoparticles have an excellent remedy for medication and are eco-friendly in environmental conditions. The antioxidant, anti-inflammatory, and antimicrobial activity are dose-dependent manner. In further development the product of wound healing nanohydrogel against wound pathogens.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123422 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CURCUMA LONGA MEDIATED CHROMIUM OXIDE NANOPARTICLES BASED DENTAL VARNISH

(51) International classification	:A61K8/02, A61Q11/00, A61K6/20, A61K6/811, A61K6/88, A61K33/24, A61K8/97, A61K36/9066
(31) Priority Document No	:NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Abstract The biocompatibility of Cr203 nanoparticles is an essential parameter for their utilization in different biological systems. The poisonous effects of Cr203 nanoparticles can be reduced by coating or functionalization their surfaces with biogenic materials. The aim of the current research, the chromium oxide nanoparticle based dental varnish was analyzed the efficacy of antimicrobial activity against oral pathogens using agar well diffusion technique. The biogenesis of chromium oxide nanoparticles using Curcuma longa based dental varnish, the analysis the potential of antimicrobial activity in different concentration as (25, 50, & 100 11g/mL) and standard. In minimum inhibitory concentration was analyzed the potential of dental varnish baseo chromium oxide nanoparticles. The synthesized chromium oxide nanoparticles based dental varnish showed the excellent outcomes in antimicrobiaL activity especially in S. aureus,-Lactobaaillus-spc,-and-S-mutans-in-higher-concentration-shown-as-38;-34,-and-JO-mm-in -inhibitorY zone and In MIC analysis shown the excellent in bactericidal concentration. The Cr203 nanoparticle-based dental varnish holds promise as an effective preventive agent in oral healthcare, particularly in combating bacterial infections associated with dental caries and periodontal diseases.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123423 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BIOACTIVE HERBAL MOUTHWASH USING ROSA AND HIBISCUS ROSA SINENSIS-MEDIATED ZNO NANOPARTICLES

(51) International classification	:A61K8/02, A61K8/18, A61K8/97, A61K33/30, A61K8/27, C01G9/02, A61K36/185, A61K36/738
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Abstract This study aims to evaluate the antimicrobial efficacy of an herbal mouthwash formulated with zinc oxide nanoparticles (ZnO NPs) derived from Rosa and H. sinensis. Zinc oxide nanoparticles (ZnO NPs) have garnered attention for their antimicrobial properties, demonstrating effectiveness against a broad spectrum of pathogenic microorganisms. Moreover, plant extracts such as Rosa and Hibiscus rosa sinensis are wellknown for their medicinal properties, antibacterial and anti-inflammatory effects. This study aims to assess the antimicrobial efficacy of a mouthwash formulation incorporating ZnO NPs derived from Rosa and H. sinensis, providing insight into its potential as a natural alternative for maintaining oral health. The study evaluated a herbal mouthwash formulated with zmc oxide nanoparticles (ZnO NPs) synthesized using extracts of Rosa and H. sinensis, a process confirmed by UV-Vis spectroscopy. Further analysis using a time-kill assay revealed the bactericidal kinetics of the mouthwash over time, showing a reduction in viable bacterial counts. Finally, the Minimum Inhibitory Concentration (MIC) was determined to quantify the lowest effective concentration of the formulation against microl; ial growth. The formulated herbal mouthwash exhibited significant antimicrobial activity against all tested oral pathogens. The largest zones of inhibition were observed against Streptococcus mutans. Time-kill curve analysis illustrates the time-dependent killing of the pathogens at different concentrations of the mouthwash. The largest zones of inhibition were observed against E.faecalis and C. albicans. The herbal mouthwash formulated with zinc oxide nanoparticles synthesized from Rosa and H. sinensis extracts demonstrated potent antimicrobial activity against key oral pathogens.

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(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123424 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SILVER NANOFILM USING SENNA AURICULATA AND SYMPLOCOS RACEMOSA FORMULATION AGAINST WOUND PATHOGENS

(51) International classification	:B82Y5/00, B82Y30/00, A61K33/38, A61K9/70, A61K31/722, A61K47/36, A61P29/00, A61P17/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract To synthesise silver nanoparticles (AgNPs) usmg Senna auriculata and Symplocos racemosa extracts and evaluate their antimicrobial and antibiofilm activities against wound-associated bacterial pathogens. In this study, S auriculata and S racemosa were selected as plant sources for the eco-ftiendly, green synthesis of AgNPs, leveraging their known ethnopharmacological properties. Wound infections are· often caused by antibiotic-resistant pathogens such as Pseudomonas sp., Actinobacter sp., Enterococcus faecalis, Escherichia coli, and Staphylococcus aureus, leading to delayed healing and increased morbidity. Silver nanoparticles have emerged as effective antimicrobial agents due to their broad-spectrum activity and ability to disrupt biofilms. Green synthesis using medicinal plants offers a cost-effective route to nanoparticle production, combining phytochemicals with nanotechnology for enhanced therapeutic outcomes. Using an agar well diffusion assay, the AgNPs film was tested against wound pathogens, and the inhibition zones were measured to determine antibacterial efficacy. For Time-Kill Kinetics Assay, the bactericidal effect of AgNPs was analysed over 5 hours using optical density and CFU counts to assess the time- and dose-dependent killing pattern at varying concentrations. For Antibiofilm Assay, Mature biofilms of each pathogen were treated with AgNPs film was quantified using ELISA. AgNPs showed excellent antimicrobial activity, with the largest zone of inhibition against Actinobacter sp. followed by Pseudomonas sp. and S mmius. The time-kill assay revealed that the highest concentration of AgNPs nanofilm significantly reduced viable bacterial counts within 3-4 hours, particularly in E. coli and S. aureus. Antibiofilm activity was also dose-dependent, with Actinobacter sp. biofilms exhibiting the highest sensitivity, followed by S aureus and Pseudomonas sp. The green-synthesised AgNPs ftom S auriculata and S. racemosa demonstrated potent antimicrobial and antibiofilm effects against key wound pathogens. Their incorporation into polymeric nanofilms incorporated in dressing enhances sustained antimicrobial action, supporting their potential use in advanced wound dressings.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123425 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MORINGA OLEIFERA FLOWER-INFUSED CHITOSAN BASED DENTAL VARNISH FOR ORAL CARE

(51) International classification	:A61K6/20, A61K6/898, A61K31/722, A61K47/36, A61K36/185, A61K8/73, B82Y5/00, B82Y300/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Abstract This research aims to evaluate the antimicrobial efficacy of M. oleifera flower-mediated chitosan dental varnish, highlighting its potential as an innovative approach in oral healthcare management. The antimicrobial efficacy of M. oleifera-loaded chitosan nanoparticles was assessed using agar well diffusion, MIC, and time-kill assays. The nanoparticles exhibited concentrationdependent inhibition against various pathogens, including Lactobacillus sp., Streptococcus mutans, Staphylococcus aureus, Enterococcus .faecalis, and Candida albicans. ·MIC testing against E. faecalis confirmed their bacteriostatic potential at low concentrations. Time-kill kinetic analysis further demonstrated concentration- and time-dependent bactericidal activity, highlighting their potential as effective alternative antimicrobial agents. MIC results showed a concentration-dependent reduction in optical density across all tested oral pathogens, with the strongest inhibition observed at the highest concentration, particularly against E. .faecalis and S. aureus. Time-kill analysis further confirmed a significant, dose- and time-dependent decline in microbial vi-ability, after 4 hours at the highest concentration. These findings highlight the potent and rapid antimicrobial activity of the nanoparticle-based varnish, underscoring its promise in managing oral pathogens and improving dental health. Chitosan nanoparticles have significantly advanced dental care by enhancing antimicrobial activity, drug delivery, and tissue regeneration. Incorporating bioactive agents, such as Moringa oleifera, further enhances therapeutic efficacy and biocompatibility. This synergy offers a promising, natural approach for preventing and managing oral diseases.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123426 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BIOMEDICAL POTENTIAL OF GREEN IN SITU NANOPARTICLES ENTRAPPED IN POLYMER

(51) International classification	:A61K 9/14, A61K 36/28, A61K 33/38, A61K 9/51, A61K 47/42
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Abstract The present invention describes a method for preparation of biosynthesized nano drug using gelatin-alginate co-polymeric matrix, and entrapping in situ synthesized silver nanoparticles using green synthesis method utilizing Calendula officina/is flower extract. The method of synthesis is UV assisted entrapment of nanosilver in a blended polymeric matrix. Calendula officina/is flower powder was dissolved in water and the extract was prepared by ultrasound sonication, heating and stirring followed by filtration. Gelatin was dissolved in the CO extract, heated at 50 °C, followed by addition of acetone resulting in precipitation. The supernatant was slowly removed and to the residue, CO extract was added and briefly heated at 50 oc followed by addition of sodium alginate solution with continuous stirring. AgN03 was then added to this blended polymeric mixture and it was stirred and then exposed to UV light briefly. Glutaraldehyde was added and stirring continued and a small amount of CO extract was further added. Finally, calcium chloride was added and stirring was done till the hydrogel was formed. This is our final product

No. of Pages : 11 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION (21) Application No.202541123460 A

(19) INDIA

(22) Date of filing of Application :08/12/2025 (43) Publication Date : 06/02/2026

(54) Title of the invention : PLA - BIOCHAR COMPOSITE ROOF INSULATION PANEL WITH INTEGRATED MAGNETIC SNAP FIT ATTACHMENT FOR ECO FRIENDLY THERMAL REDUCTION IN EXISTING METAL ROOFING

(51) International classification	:B32B 5/18, E04D 3/35, E04B 1/80, E04C 2/296, E04C 2/292	(71)**Name of Applicant :** **1)NANDHA ENGINEERING COLLEGE** Address of Applicant :Erode - Perundurai Main Road,Vaikkaalmedu,ERODE,TAMILNADU,INDIA,638052 Tamil Nadu India (72)**Name of Inventor :** **1)T SATHISH** **2)S JANANI** **3)KS ANSHID** **4)R BOOPATHI**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
ABSTRACT OF THE INVENTION .-... ·: Q) C) Ill D.. Q) -1-- N E.... 0 -LL. 0 (0 -::1' M .N... . ..... -::1' 1.1') N 0 ~ 1.1') 1.1') .N".".'. ". Ln N 0 ~ CJ cQ)::""-'" :::-..:-- :7 ,ZJf,:. ~ ... c ~r.~--. {: I CIO 0 The newly developed material relates to a lightweight, ceo-friendly retrofit insulation panel specifically developed for metal roofing applications. The panel is manufactured from a high-performance PLAbiochar composite and incorporates a magnetic snap-fit mounting system that enables fast, non-invasive installation. The multilayer structure includes an outer UV -resistant PLA protective skin, a low-density PLA-biochar foam core with enhanced thermal insulation properties, and an inner CaCO,-reinforced PLA layer that increases stiffness and dimensional stability. High-strength neodymium magnets are encapsulated in durable PLA housings along the underside of the panel, allowing secure attachment to existing metal roofs without drilling, adhesives, or specialized tools. During installation, the panel naturally creates a ventilated air gap between the roof and the insulation layer, improving thermal resistance, reducing conductive heat transfer, and promoting passive heat dissipation. The biochar-infuscd PLA core provides low thermal conductivity, improved fire resistance, and effective acoustic dampening, contributing to enhanced indoor comfort. The system significantly lowers roof surface temperature and reduces indoor heat gain, resulting in lower cooling energy demand. The design is fully removable, lightweight, biodegradable, and compatible with sustainable manufacturing practices. Overall, the invention offers a high-performance, environmentally responsible alternative to conventional roof insulation systems .

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123461 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MULTILAYER CYLINDRICAL ELECTROCHEMICAL DEVICE WITH RADIAL DIFFUSION FOR CATALYTIC AND ALKALINE CONVERSION OF AIRBORNE POLLUTANTS

(51) International classification	:B01D 53/86, B01J 23/34, B01D 53/75, B01D 53/62, B01D 53/34
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.D.REVATHI
2)M GUHAN
3)G MOWNIKA
4)J A AASINTH

(57) Abstract :
ABSTRACT OF THE INVENTION The newly developed device provides a multilayer cylindrical electrochemical air-purification system for the removal of gaseous pollutants such as CO, CO~, SOz, NO., VOCs, 0,, NH,, and particulate matter by integrating catalytic, alkaline absorption, and electrochemical reaction mechanisms. The device is incorporated with an air-handling chamber fitted with an inlet fan, a coarse mesh barrier, and an outlet fan and also holds a cylindrical reactor at the centre. The incoming air flows into an axial pipe with multiple nozzles that evenly distribute the air radially outward across seven concentric functional layers. The functional layers with a pre-filter cloth, a MnOz-activated carbon catalyst layer, a nickel mesh collector, an alkaline KOH/NaOH-infused melamine sponge, a PV A-KOH gel layer, a nickel mesh cathode, and a zinc anode were concentrically arranged inside the cylindrical reactor. When air flows outward through each layer, contamiilants are removed layer by layer through filtration, catalytic oxidation, chemical absorption, and electrochemical transformation. This multilayer cylindrical electrochemical device with radial-diffusion for catalytic and alkaline conversion of airborne pollutants enables the removal of multiple pollutants simultaneously with high-efficiency and provides a patentably new approach to a compact air-cleaning system

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123462 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SUSTAINABLE SOIL MOISTURE RETENTION USING AGRICULTURAL AND DOMESTIC BY PRODUCTS

(51) International classification	:A01G 1/00, C09K 17/40, A01B 79/02, A01G 22/00, C09K 17/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)A YOGANATHAN
3)J A JEBINTH
4)D BOOPALAN

(57) Abstract :
ABSTRACT OF THE INVENTION Sustainable water management plays a crucial role in modern agriculture, especially in regions facing frequent drought, irregular rainfall, and high evaporation loss. Farmers often struggle to maintain soil moisture for longer periods, resulting in reduced crop productivity and increased irrigation demand. This project focuses on the development of an eco-friendly soil moisture retention material using a combination of agricultural and domestic by-products. The selected raw materials-coconut coir, bagasse, eggshell powder, zeolite, and aloe vera gelwere chosen for their natural availability, low cost, and environmental benefits. Coconut coir is known for its high water-holding capacity and excellent aeration properties, while bagasse contributes additional absorbency and acts as a biodegradable support medium. Eggshell powder, rich in calcium carbonate, improves soil structure and reduces moisture loss by enhancing the soil's ability to bind water molecules. Zeolite, a porous mineral, plays a significant role in retaining both water and essential nutrients, ensuring slow release to the plant root zone. Aloe vera gel contains natural polysaccharides that behave like hydrogel, makingit a suitable binder and moisture-retaining agent in the formulation. The prepared mixture was incorporated into soil samples and monitored over a 14-day period. Moisture levels were recorded at regular intervals to evaluate the drying rate of treated soil compared to untreated control samples. The experimental results showed that the treated soil retained moisture for a significantly longer duration, demonstrating slower evaporation and improved water-holding performance. This indicates that the developed material can effectively reduce irrigation frequency and promote better water conservation in agricultural fields. O.verall, this project highlights a simple, cost-effective, and sustainable. approach to enhancirig soil ~oishiie iete~tion using con'iinoruy available i;a.sie materials: The formulati6n not only supports resource recycling but also contributes to climate-resilient farming practices. The outcome suggests strong potential for practical application in small-scale and large-scale agricultural systems, making it an environmentally responsible solution for future farming challenges.

No. of Pages : 6 No. of Claims : 6

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(21) Application No.202541123467 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PROGRESSIVE WEB APP

(51) International classification	:G06F 9/445, H04L 29/08, H04L 29/06, G06F 9/44, G06F 8/61
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT A Progressive Web App (PWA) is a modern web-based application designed to combine the capabilities of native mobile apps with the accessibility and flexibility of web technologies. This invention provides an application model that delivers fast loading, offline functionality, responsive design, and secure data handling through service workers, caching mechanisms, and HTTPS protocols. PWAs can be installed directly on a user's device without requiring app-store distribution, reducing storage consumption and improving accessibility. The system operates consistently across multiple platforms and network conditions, offering features such as push notifications, background sync, and home-screen launch. By enabling a single codebase to run on various devices, the PWA significantly reduces development effort and maintenance cost while enhancing user engagement and performance. This abstract summarises the technical approach and functional benefits of adopting the PWA architecture.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123486 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTIMODAL ALZHEIMER'S DIAGNOSTIC SYSTEM : CNN, GRAD-CAM, AND CHATBOT INTEGRATION

(51) International classification	:G16H 50/20, A61B 5/055, G06T 7/00, G16H 30/40, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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3)MR.SRIRAM.S.S
4)MS.KAVIYASHREE.S
5)MR.AUGUSTINE.J

(57) Abstract :
ABSTRACT This invention relates to a multimodal Alzheimer's diagnostic system that combines deep learning-based MRI analysis, visual explainability, and conversational interaction in a unified framework. The system utilizes a balanced dataset of approximately 12,000 brain MRI images distributed across four dementia stages-Non-Demented, Very Mild Dementia, Mild Dementia, and Moderate Dementia-and employs a transfer-learning ResNet18 architecture with a custom classifier head trained using cross-entropy loss with label smoothing, Adam W optimization, a ReduceLROnPiateau scheduler, and early stopping. During inference, an uploaded MRI scan is preprocessed and passed through the network to obtain a predicted dementia stage and class probabilities, while a Grad-CAM module generates a heatmap over the image to highlight regions most responsible for ·the prediction. A chatbot module then consumes the prediction and Grad-CAM context to provide natural-language explanations, answer Alzheimer's-related questions, and guide users through the implications of the result. By integrating classification, explainability, and interactive counseling, the invention offers an interpretable, patient-centric diagnostic tool that improves transparency and usability of Al-assisted Alzheimer's detection.

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(19) INDIA
(22) Date of filing of Application :08/12/2025
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(43) Publication Date : 06/02/2026

(54) Title of the invention : CONVEYOR BELT FAULT DETECTION SYSTEM

(51) International classification	:B65G 43/02, G06T 7/00, B65G 43/00, G06K 9/00, B65G 43/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)VIJAYAKUMAR N K
3)VARUN J
4)VASU V S

(57) Abstract :
ABSTRACT OF THE INVENTION: The invention provides an intelligent conveyor belt fault detection system that combines computer vision and ultrasonic sensing for real-time fault 10 detection. The system captures images and sensor readings of the conveyor belt to identify cracks, tears, and thickness anomalies. An AI model analyzes the data and generates alerts through WiFi when faults are detected. The system reduces maintenance time, enhances reliability, and supports predictive maintenance in industrial environments.

No. of Pages : 9 No. of Claims : 7

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(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123506 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND DEVELOPMENT OF SIGN LANGUAGE RECOGNITION SYSTEM FOR IMPAIRMENT

(51) International classification	:G09B 21/00, G09B 21/04, G06F 3/01, G06K 9/00, G09B 21/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
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2)DEPARTMENT OF HEALTH RESEARCH
(72)**Name of Inventor :**
1)Dr. M. Neela Harish
2)Dr. G. Babu
3)R. Subathira

(57) Abstract :
DESIGN AND DEVELOPMENT OF SIGN LANGUAGE RECOGNITION SYSTEM FOR IMPAIRMENT ABSTRACT OF THE INVENTION: All over world, deaf and dumb people face struggle in expressing their feelings to other people. There are various challenges experienced by speech and hearing-impaired people at public places in expressing themselves to normal people. The solution to this problem is determined in this paper, by the usage of the Indian sign language symbols which are generic to all deaf and dumb people in India. The gestures illustrated by the Indian sign language symbols will be conquered with the support of the flex sensors and accelerometer. The movements included during gesture representation are rotation, angle tilt, and direction changes. The flex sensor and the accelerometer are incorporated over fingers and wrist respectively to acquire their dynamics, these sensors are fitted over the data glove. These voltage signals will then be processed by microcontroller and sent to voice modules, where the words voice outputs are stored and played backed equivalent to each word values to produce the appropriate voice words with the help of the speaker. Total Number of Words in Abstract:1669. head.i

No. of Pages : 14 No. of Claims : 5

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(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123507 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTERLA - Al-Powered Learning, Revision, and Interview Prep Ecosystem

(51) International classification	:G06Q 50/20, G06Q 10/10, G09B 7/00, G09B 7/02, G09B 5/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
INTERLA - Al-Powered Learning, Revision, and Interview Prep Ecosystem ABSTRACT OF THE INVENTION 5 10 15 Interla is an intelligent and interactive web-based platform designed to enhance interview preparation for students and professionals. It offers personalized, Al-driven tools that simulate real interview scenarios through one-on-one and group sessions, providing real-time feedback to improve performance. The platform promotes collaborative learning by allowing users to upload 15-minute educational videos and study notes on various topics and interview strategies. For quick and efficient revision, an Al-powered chatbot summarizes lengthy materials into concise key points, saving time and boosting understanding. By combining live interview practice, content sharing, and Al summarization, Interla delivers a comprehensive and user-friendly solution that enhances communication, confidence, and problem-solving skills. This innovative system bridges the gap between theoretical knowledge and practical experience, empowering users to excel in real-world interviews and career growth. ! CD ��) re Q. CD 20 Total Number of Words in Abstract: 148��

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123531 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI BASED PREDICTIVE ANALYTICS SYSTEM FOR CAREER PROGRESSION AND SKILL DEVELOPMENT

(51) International classification	:G06N 20/00, G06Q 10/10, G06Q 10/06, G06Q 10/04, G06N 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. DEEPA MANOKARAN

(57) Abstract :
The present invention discloses an AI-Powered Intelligent Recruitment and Career Path Prediction System that integrates Artificial Intelligence (AI), Machine Learning (ML), and Natural Language Processing (NLP) to automate and optimize human resource management processes. The system comprises a data acquisition module for collecting structured and unstructured candidate information, a resume parsing module for generating standardized profiles, and a suitability scoring engine that matches candidates with job requirements using trained ML models. A bias-reduction component ensures fairness in recruitment by eliminating or minimizing the influence of sensitive attributes such as gender, age, or ethnicity. The invention further incorporates a retention prediction module that evaluates candidate stability and engagement to generate a retention probability score, thereby reducing turnover risks. Additionally, a career path forecasting module predicts future growth trajectories, suggesting personalized training and upskilling opportunities for employees. An adaptive interview assistance feature supports interviewers through AI-generated prompts, automated scoring, and sentiment analysis of responses, ensuring objectivity. All results are integrated into a centralized analytics dashboard that visualizes candidate rankings, retention risks, and workforce development forecasts, enabling data-driven HR decision-making. By unifying recruitment automation, fairness-aware evaluation, predictive retention analysis, and career development planning in a single platform, the invention otlers a comprehensive and scalable solution for enhancing organizational efficiency, diversity, and long-term workforce stability across industries.

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123532 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ARTIFICIAL INTELLIGENCE-BASED DECISION SUPPORT FRAMEWORK FOR RECRUITMENT, ENGAGEMENT, AND RETENTION IN HUMAN RESOURCE MANAGEMENT

(51) International classification	:G06N 20/00, G06Q 10/06, G06Q 10/10, G06N 5/04, G06F 16/332
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. DEEPA MANOKARAN

(57) Abstract :
The invention discloses an Artificial Intelligence-Based Decision Support Framework designed to optimize recruitment, engagement, and retention processes within Human Resource Management. The framework . integrates Artificial Intelligence (AI), Machine Learning (ML), and Natural Language Processing (NLP) techniques to collect, analyse, and interpret structured and unstructured data from multiple internal and external sources. It employs predictive modelling to evaluate candidate suitability, forecast employee performance, and identify potential attrition risks. The system further applies sentiment and emotion analytics to assess employee engagement levels, providing continuous insights into satisfaction and motivation. Through interactive dashboards and visual analytics, the framework delivers actionable recommendations and real-time alerts that enhance strategic HR decisionmaking. Explainable AI (XAI) components ensure fairness, transparency, and accountability in automated 1 outcomes, reducing human bias. in workforce management. The invention provides a unified, intelligent, and data-driven platform that transforms traditional HR p)actices ·into proactive, efficient, and ethical decision- . making systems, ultimately im~roving organizational performance and employee retention.

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123543 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LANGUAGE OF SIGNS -AN AUTOMATED LANGUAGE OF SIGNS RECOGNITION AND TRANSLATION SYSTEM

(51) International classification	:G09B 21/00, G06N 3/04, G06N 3/08, G06K 9/00, G06F 3/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Suman Karthick A
4)Surendar M
5)Thiruselvam R
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3)Suman Karthick A
4)Surendar M
5)Thiruselvam R

(57) Abstract :
The Sign Language Converter is an intelligent real-time communication. system designed to translate hand gestures and sign language motions into readable text or audible speech using computer vision and machine learning techniques. The system captures live video input through an integrated camera module, processes the visual data using .a convolutional neural network (CNN)-based gesture recognition model, . and convert~., recognized sign~·_in\o con~esponding linguistic outputs. The invention . "tl:. ·. . ·.'. . . .. addresses C0/11mUnication gaps b~tween hearing-impaired individuals and. non-sign- ' . . language users by providing an. ·'a' utomated, accurate, and user-friendly translation interface. The system supports dynamic and static sign detection, gesture tracking, noise tlltering, and contextual prediction for improved translation accuracy. A user interface displays detected signs, confidence levels, and final translated output in real time. The technology significantly reduces reliance on human interpreters, enhances accessibility in public and private communication settings, and enables seamless interaction acrqss educational, medical, corporate, and social environments. This invention provides an efficient, scalable, and inclusive solution for bridging communication barriers through automated sign-to-text conversion·. Furthermore, the invention is designed to operate on mobile devices, desktop applications, and cloud platforms, allowing flexible deployment across educational, professional, public, and personal environments. By combining scalability, accuracy, and usability, this invention offers an ·assistive communication solution capable of bridging the gap between sign language users and non-sign-language speakers.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123544 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CLOUDCOVER AI: ML-POWERED REAL-TIME DATA MASKING IN CLOUD STORAGE FOR GDPR/DPDP COMPLIANCE

(51) International classification	:G06F 21/62, G06N 20/00, H04L 29/06, G06F 21/60, H04L 9/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)DR.M.HEMA
2)JYOTHISHREE RAJKUMAR
3)KARTHIKEYAN V

(57) Abstract :
CloudCover AI is a machine-learning-powered real-time data masking system designed to protect sensitive information during cloud ingestion processes. Unlike traditional post-storage anonymization tools, the system performs masking at the point of data entry, ensuring that raw Personally Identifiable Information (PII) and Protected Health Information (PHI) are never exposed or stored in unprotected form. The invention 15 integrates transformer-based Natural Language Processing (NLP), custom Named Entity Recognition (NER), and rule-based detection to accurately identify sensitive entities across structured, semi-structured, and unstructured data formats. Masking techniques such as redaction, pseudonymization, tokenization, and format-preserving transformation are applied dynamically based on compliance requirements. The system 20 further incorporates secure cloud integration, audit logging, and automated validation Q) mechanisms that support GDPR and DPDP regulations. By combining intelligence, C) aI.l.l scalability, and regulatory compliance, CloudCover AI provides a robust framework for secure, real-time privacy preservation in modern cloud environments

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123546 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART HR:AI TOOLS FOR OPTIMIZED RECRUITMENT TO RETENTION DECISION PROCESSES

(51) International classification	:G06N 20/00, G06Q 10/06, G06Q 10/10, G06N 5/04, G06N 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. DEEPA MANOKARAN

(57) Abstract :
The invention titled "Smart HR: AI Tools for Optimized Recruitment-to-Retention Decision Processes" presents an advanced Artificial Intelligence (AI)-driven framework designed to revolutionize Human Resource Management (HRM) by enabling intelligent, data-based decision-making across the entire employee lifecycle. The system integrates multiple AI technologies-such as machine learning, natural language processing, predictive analytics, and sentiment analysis-to optimize recruitment, engagement, performance evaluation, and retention. Through its modular design, the invention automates candidate screening and selection, analyses employee sentiment and engagement, predicts performance outcomes, and identifies potential attrition risks. A centralized AI Decision Support Dashboard (AIDSD) provides realtime insights, visualization, and prescriptive recommendations to HR professionals, promoting efficiency, transparency, and objectivity in workforce management. The system incorporates an etliical and explainal5le AI framework to ensure fairness, reduce bias, and uphold data privacy. It also employs a continuous learning mechanism, allowing adaptive model improvement based on new data and feedback. This invention thus transforms HR management from a reactive administrative function into a proactive, strategic, and intelligent decision-making system, enhancing organizational productivity, inclusivity, and long-term workforce sustainability

No. of Pages : 16 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123552 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS SURFACE VEHICLE SYSTEM FOR INTELLIGENT AQUATIC DEBRIS DETECTION AND COLLECTION

(51) International classification	:B63B 35/32, G06N 3/08, G06N 3/04, G06V 10/764, G01N 33/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr.P.Kumar
2)Raghavan

(57) Abstract :
The Autonomous Surface Vehicle System for Intelligent Aquatic Debris Detection and Collection is an innovative robotic solution designed to address the global challenge of water pollution through the integration of Artificial Intelligence (AI), Machine Learning (ML), I ntcrnet of Things (loT), and renewable energy technologies. The system functions as a selfnavigating, solar-powered surface vehicle capable of detecting, classifying, collecting, and monitoring floating debris in real time without human intervention. It employs an Al-based \'ision detection unit using Convolutional Neural Networks (CNNs) to analyze continuous image streams of water surfaces, accurately identifying debris types such as plastics, bottles, leaves. and waste materials while distinguishing them from natural entities like fish and n:getation. Once debris is detected, an onboard autonomous navigation system, driven by Ci PS. ultrasonic sensors, and Inertial Measurement Units (IMU), calculates an optimized path using advanced path-planning algorithms for efficient and collision-free movement. The mechanical debris collection mechanism, consisting of a conveyor or scoop assembly, retrieves and deposits the debris into a storage compartment monitored by load sensors. The system operates primarily on solar energy, with a smart power management unit distributing energy across all subsystems to ensure sustainability and long-term operation. Data from all modules, including operational status, debris volume, GPS coordinates, and battery performance, are transmitted via the loT communication interface to a cloud-based dashboai·d, allowing for real-time monitoring, performance analytics, and mission scheduling. This continuous feedback loop also enables the AI algorithms to undergo self-learning and performance optimization over time. The invention offers a fully autonomous, eco-friendly, and intelligent alternative to manual water cleaning methods, significantly reducing human L'i"I(Jrt and environmental impact. By combining AI perception, loT connectivity, renewable energy utilization, and autonomous control, the system represents a major advancement in smart environmental robotics, providing a scalable and sustainable solution for global aquatic waste management and ecological conservation.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123555 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NEUROVOICE: A NON-INVASIVE BRAIN-COMPUTER INTERFACE RESTORING THOUGHT-TO-SPEECH COMMUNICATION

(51) International classification	:G06F 3/16, G10L 13/08, G10L 13/00, G10L 13/02, G10L 13/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Jami Sai Akshaya
3)Fareed Ahamed K M
4)Saunak Ramiya Sebasan

(57) Abstract :
Ncmn V nice is a transformative, user-centered brain-computer interface (BCI) designed to rcstPrc natural, real-time speech for individuals affected by paralysis and neurogenic CPtnmunication disorders. Integrating high-density EEG acquisition, advanced deep learning ncuml decoding, and on-device multilingual text-to-speech synthesis, the system delivers sc:tmlcss. accessible brain-to-voice communication. NeuroVoice employs a hybrid approach: ciPud-hased prototyping for rapid model development and optimization, followed by privacyl(lntscd deployment using the NVIDIA Jetson edge platform for real-time inference. A clcdicatccl mobile application provides intuitive control, feedback, and impact monitoring, "hilc adaptive calibration enables personalized performance for diverse users in home and clinical settings. By supporting direct, spontaneous communication and protecting sensitive ncur:tl data, NeuroVoice empowers users, enhances autonomy, and promotes social inclusion. The project aligns with the United Nations Sustainable Development Goals-Good Health and Well-being (SDG 3), Reduced Inequalities (SDG 10), and Industry, Innovation and In i'rast ructure (S DG 9)-setting a new standard for ethical, scalable, and accessible neuroassistt\' C technology worldwide.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123564 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SEAL & HEAL CREAM A NOVEL COMBINATION OF WRIGHTIA TINCTORIA, CLOBETASOL PROPIONATE 0.05%, 10% UREA, AND ALOE VERA FOR PSORIASIS.

(51) International classification	:A61K 36/886, A61K 31/573, A61P 17/06, A61K 9/06, A61K 36/896
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)KEERTHANA.M
2)RAJESH KUMAR. S
3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
This study, Efficacy of 'Seal&Heal' Cream - A Novel combination of Wrightia Tinctoria, Clobetasol propionate 0.05%, I 0% Urea, and Aloe vera Versus Clobetasol propionate 0.05% monotherapy in the management of psoriasis- A comparative study'', evaluates the efficacy of Seal&Heal cream, a novel topical fom1Ulation combining Wrightia Tinctoria, Clobetasol propionate 0.05%, I 0% Urea, and Aloe vera, compared to Clobetasol propionate 0.05% monotherapy in psoriasis management. Psoriasis, a chronic, immunemediated inflammatory skin disorder marked by hyperproliferation and scaling, demands effective multi-targeted treatment. Seal&Heal cream integrates a potent corticosteroid with natural botanical extracts and moisturizing agents to address inflammation, keratinization, and skin batTier dysfunction. The combination aims to enhance therapeutic outcomes by reducing plaque thickness, erythema, scaling, and itch, while improving skin hydration and minimizing steroid-related side effects. Its multi-action ingredients work synergistically to provide sustained relief and enhanced skin repair. This novel formulation offers a promising advancement in topical psoriasis therapy by combining anti-inflammatory, keratolytic, antimicrobial, and wound healing properties, thus improving patient outcomes and quality of life. cQ

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123565 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EFFICACY OF A NOVEL COMBINATION GEL CONTAINING ADAPALENE 0.1%, AZELAIC ACID 10%, GLYCERIN 4% AND SQUALANCE 2% COMPARED TO ADAPALENE 0.1%, MONOTHERAPY IN PATIENTS WITH MILD TO MODERATE ACNE VULGARIS: A RANDOMIZED COMPARATIVE STUDY.

(51) International classification	:A61K9/06, A61K31/085, A61K31/045, A61K31/01, A61K31/194, A61K47/44, A61K47/34, A61K47/38
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)RAJESH KUMAR. S
3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Efficacy of a Novel Combination Gel Containing Adapalene 0.1 %, Azelaic Acid I 0%, Glycerin 4%, and Squalane 2% Compared to Adapalene 0.1% Monotherapy in Patients with Mild to Moderate Acne Vulgaris: A Randomized Comparative Study The present invention relates to a novel fixed-dose topical gel formulation fofthe treatment of mild to moderate acne vulgaris. The composition comprises Adapalene 0.1 %, Azelaic Acid I 0%, Glycerin 4%, and Squalane 2% in a pharmaceutically acceptable gel base. Adapalene provides comedo lytic and anti-inflammatory activity, while Azelaic Acid exerts antimicrobial, keratolytic, and anti-tyrosinase effects, addressing both lesions and post-inflammatory hypcrpigmcntation. Glycerin and Squalanc improve hydration, barrier function, and tolerability, reducing irritation associated with retinoid therapy. The fommlation offers advantages over existing adapalene-benzoyl peroxide products by combining complementary therapeutic actions with enhanced skin comfort. Clinical evaluation in a randomized comparative study aims to demonstrate superior efficacy and tolerability of the novel combination gel compared to adapalene monotherapy, thereby providing a safe, effective, and patient-friendly treatment option for acne vulgaris.

No. of Pages : 10 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123566 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEVELOPMENT AND VALIDATION OF THE ISHAS: INTEGRATED SEXUAL HEALTH ASSESSMENT SCALE FOR CULTURALLY SENSITIVE AND INCLUSIVE SCREENING OF SEXUAL DYSFUNCTIONS IN INDIAN POPULATON.

(51) International classification	:A61B 10/00, A61B 5/00, A61H 19/00, A61B 5/22, A61B 5/107
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)SHYAM SUNDARK
3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
Sexual health is a multidimensional aspect of overall well-being, yet its assessment in clinical settings, particularly in culturally diverse populations like India, remains fragmented and limited. The Integrated Sexual Health Assessment Scale (ISHAS) is a novel, structured, clinician-administered tool designed to comprehensively evaluate sexual, marital, and psychosocial health in adults. The scale comprises six modules: Demographics, Sexual History, Sexual Function (desire, arousal, orgasm, pain), Marital/Relationship, Psychosocial & Behavioral factors, and Scoring & Severity assessment. Each module includes items scored on a quantitative scale, enabling domain-specific evaluation and calculation of a total sexual health severity score, which classifies dysfunction as mild, moderate, or severe. The ISHAS is culturally sensitive, inclusive ofLGBTQ+ populations, and allows flexible administration via clinician interview or self-report, in both paper-based and digital formats. Optional submodules accommodate diverse relationship structures, partner assessment, and psychosocial stressors. The tool is designed to facilitate diagnosis, treatment planning, and monitoring of sexual health interventions, while maintaining patient confidentiality. Pilot lt:stiug and validation ensure reliability, acceptability, and adaptability for both 9linical and research applications. The ISHAS represents an integrated approach to sexual health assessment, addressing a critical gap in structured, culturally appropriate evaluation tools in the Indian context. ...

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123567 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A NOVEL APPROACH TO RESTRAINING DEVICES

(51) International classification	:A61B 5/00, A61F 5/37, A61B 5/1455, G08B 21/02, A61B 5/145
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Shubham Tamili
2)Raman Krishnan
3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
The Abstract should contain the title and the short description of the invention (should contain 150 words) The invention discloses a patient restraint device integrating dual mechanical fixation with physiological monitoring and safety alarms. The device comprises a primary strap (1) for immobilization, a secondary strap (2) for additional security, and a quick-release mechanism (3) for emergency disengagement. A biomedical sensor unit (4) embedded in the strap continuously measures pulse and oxygen saturation (SpOD), while a pressure sensing element (5) monitors compression exerted on the patient's limb. Data are processed by a control and display unit (6), which activates an alarm system (7) including visual, audible, and wireless alerts when preset thresholds are exceeded. The system enhances patient safety by preventing circulatory compromise, ensuring continuous monitoring, and providing early warning during restraint application .

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123568 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NANO EMULSION FORMULATION OF MAGNESIUM CHANDANADI THAILAM AND MELATONIN FOR SLEEP ENHANCEMENT

(51) International classification	:A61K 9/107, A61K 47/44, A61K 31/4045, A61P 25/20, A61K 47/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)VINYAY KUMAR
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(57) Abstract :
Nanoemulsion Formulation of Magnesium, Chandanadi Thailam and Melatonin for Sleep Enhancement The present invention relates to the development of a novel nanoemulsion formulation combining magnesium, Chandanadi Thailam, and melatonin for improving sleep quality in adults with insomnia. The formulation is designed as an oil-in-water nanoemulsion, with melatonin incorporated into the lipid phase of Chandanadi Thai lam, magnesium dispersed in the aqueous phase, and stabilized using pharmaceutically acceptable emulsifiers. The preparation involves emulsifier mixing, addition of actives, and high-shear homogenization followed by ultrasonication to achieve a droplet size of 20-200 nm. Characterization confirmed nanoscale size with low polydispersity and stable zeta potential. Comparative release studies demonstrated superior solubility and absorption, with the nanoemulsion showing 30-50% higher bioavailability compared to conventional formulations. A randomized, double-blind, placebo-controlled evaluation further indicated significant improvements in sleep onset latency, Pittsburgh Sleep Quality Index (PSQI) scores, and overall sleep efficiency. This invention provides a safe, stable, and synergistic tri-active composition offering an innovative approach for insomnia management

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123585 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT MUSCLE AND HEART VARIABILITY FOR SAFE AND EFFICIENT LIFTING

(51) International classification	:A61B 5/00, A61B 5/11, A63B 24/00, A61B 5/024, G16H 40/67
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention presents the design and development of Lift Smart AI, an intelligent wearable system that monitors muscle activity, heart rate variability, and body posture in real time using Artificial Intclli~Jcncc (AI) and Internet of Things (loT) technologies. The system eliminates the need for manual supervision during lifting and exercise by employing EMG, HRV, and IMU sensors to capture precise physiological signals. These signals arc processed through an Al-based anomaly detection algorithm that automatically identifies muscle fatigue, posture deviation, and abnormal stress levels. All processed data and alerts are securely transmitted to a cloud database through loT-enabled connectivity, allowing coaches, physiotherapists, and authorized users to access real-time health insights through a mobile or web dashboard. The platform further supports live monitoring, performance analytics, risk assessment, and automated report generation, ensuring transparency and data-driven decision-making. This innovation enhances workout safety, reduces the risk of injuries, and improves rehabilitation outcomes by providing continuous, accurate, and personalized monitoring. It is especially suitable for gyms, sports training centers, physiotherapy clinics, and occupational safety environments, promoting a smart, reliable. and technology-driven approach to physical performance and health management.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123589 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED INTELLIGENT RECRUITMENT AND CAREER PATH PREDICTION SYSTEM

(51) International classification	:G06Q 10/06, G06N 20/00, G06Q 50/20, G06Q 10/10, G06N 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention titled "AI-Based Predictive Analytics System for Career Progression and Skill Development" presents an intelligent framework that leverages artificial intelligence and machine learning to analyse workforce data, forecast career growth, and recommend personalized skill enhancement strategies. The system integrates data from multiple sources-such as perfonnance metrics, training history, and industry trends-to generate accurate, data-driven insights. Through its predictive analytics engine, the system identifies potential career pathways, promotion readiness, and evolving skill requirements for individuals. A built-in skill gap analysis module compares current competencies with future role expectations, automatically suggesting targeted learning programs or training modules. The interactive visualization interface provides real-time dashboards for employees and HR managers, enabling informed decision-making and proactive career planning. Deployed on a secure, cloud-based platfonn with Explainable AI (XAI) integration, the invention ensures transparency, scalability, and data privacy. This system revolutionizes traditional career management by fostering continuous learning, personalized development, and organizational growth through AI -powered insights

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123600 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DOUBLE BALOON CATHETER FOR LABOUR INDUCTION

(51) International classification	:A61M 25/10, A61F 2/958, A61B 17/42, A61M 29/02, A61M 25/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)RAJALEKSHMI
3)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
The present invention relates to a modified Foley catheter designed for mechanical induction of labor. Unlike traditional single-balloon catheters, this device features a double-balloon system-one balloon positioned above the internal cervical os and another below the external cervical os. The simultaneous inflation of both balloons exerts controlled and uniform pressure on the cervix, promoting effective cervical ripening and dilation. This modification enhances catheter stability, reduces the latency period before active labor onset, and improves overall safety and efficacy of labor induction. The invention provides a simple, cost-effective mechanical alternative for induction, particularly beneficial in cases where pharmacological methods are contraindicated or less desirable.

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123601 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SELF ILLUMINATED VAGINAL SPECULUM FOR OBSTETRIC AND GYNAECOLOGICAL USE-DEVELOPMENT AND OPTIMISATION

(51) International classification	:A61B 1/303, A61B 1/06, A61B 1/32, A61B 1/00, A61B 1/313
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a self-illuminated vaginal speculum for use in obstetric and gynaecological examinations. The device is based on a Sims-type speculum and incorporates a centrally positioned LED light source integrated into the shaft, powered by a rechargeable or disposable battery module housed within the handle. This built-in illumination eliminates the dependence on external light, thereby ensuring direct, uniform visualization of the cervix and vaginal walls. The device is constructed from biocompatible, non-toxic, and sterilizable materials, allowing repeated clinical use. By improving visibility, it reduces examination time, enhances patient comfort, and increases clinician efficiency. The invention is cost-effective, portable, and user-friendly, making it suitable for tertiary centres as well as primary and low-resource healthcare settings. Applications include routine pelvic examinations, cervical cancer screening, Pap smears, intrauterine device procedures, and minor gynaecological interventions, addressing the limitations of traditional and commercially available illuminated speculums.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025

(21) Application No.202541123602 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN OF A MINIATURIZED NANOSILVER COATED URINARY CATHETER FOR OBSTETRICS

(51) International classification	:A61B 17/42, A61M 25/00, A61L 31/16, A61F 2/00, A61L 29/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)DEEPAK NALLASWAMY VEERAIYAN

(57) Abstract :
This invention relates to the design and evaluation of a miniaturized silver-coated urinary catheter specifically developed for obstetric use during active labour. The present device is constructed from medical-grade silicone, with a reduced size of 8 Fr and shortened length of 15 em, optimized for the female urethra in labour. A thin, uniform silver nanoparticle coating (100-300 nm) is applied to external and internal surfaces, enabling controlled release of silver ions for 12-24 hours, sufficient for the duration of catheterization in active labour. The catheter features a rounded atraumatic tip, dual drainage eyelets, and an optional low-volume retention balloon (5-10 mL). This novel design provides improved comfort, reduced trauma, and effective antimicrobial protection, representing a significant advancement in intrapartum bladder management. ---

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123603 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NOVEL TOPICAL NAIL LACQUER FORMULATION CONTAINING 0.1% TRETINOIN AND 6% SALICYLIC ACID FOR THE MANAGEMENT OF NAIL HICKENING DISORDERS SECONDARY TO INFLAMMATORY CONDITIONS.

(51) International classification	:A61K 31/60, A61P 17/06, A61K 31/606, A61K 9/00, A61K 9/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Nail thickening disorders secondary to inflammatory conditions such as psoriasis, lichen planus are challenging to manage due to limited efficacy and poor penetration of conventional topical agents. Systemic therapies can be etTective but carry risks of adverse effects and are unsuitable for long-term use in many patients. This study presents a novel fixed-dose topical nail lacquer containing Tretinoin 0.1% and Salicylic Acid 6%, engineered to target complementmy mechanisms in the management of inflammatory nail thickening. Tretinoin, a retinoid, drives keratinocyte turnover and decreases hyperkeratosis, addressing the underlying inflammatory and structural changes within the nail plate. Salicylic acid acts as a potent keratolytic, softening and thinning the thickened nail, thereby enhancing tretinoin penetration and direct keratin remodeling. The strategic combination of tretinoin and salicylic acid in a lacquer vehicle enables sustained nail contact, maximizes local efficacy, and reduces systemic absorption and associated risks. This integrated approach offers a promising, user-friendly alternative for patients with nail thickening disorders, supporting improved nail function, appearance, and quality of life while minimizing adverse effects and complexity compared to systemic or multi-step topical reg1mens.

No. of Pages : 10 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123604 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NOVEL TOPICAL MULTIPURPOSE CREAM FORMULATION CONTAINING 0.1% TRETINOIN,1% LULICONAZOLE AND 1% PRAMOXINE HYDROCHLORIDE FOR THE MANAGEMENT OF DERMATOPHYTOSIS

(51) International classification	:A61P 31/10, A61K 9/06, A61K 47/10, A61K 31/4745, A61K 31/4178	(71)**Name of Applicant :** **1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES** Address of Applicant :Saveetha Medical college and Hospital, Thandalam, CHENNAI,TAMIL NADU ,INDIA, 602105. Tamil Nadu India (72)**Name of Inventor :** **1)AFRIN FAHEEMA J** **2)RAJESH KUMAR** **3)DEEPAK NALLASWAMY VEERAIYAN**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
Dermatophytosis, a superticial fungal infection affecting the skin, poses therapeutic challenges due to incomplete pathogen eradication, persistent inflammation, and pruritus, compounded by limited efticacy and poor penetration of conventional topical agents. Systemic therapies, while etlective, may carry risks of adverse effects and are inappropriate for long-tenn or mild infections. This study. presents a novel topical multipurpose cream fommlation containing 0.1% tretinoin, l% luliconazole, and I% pramoxine hydrochloride. Tretinoin accelerates epidermal turnover and enhances penetration of active ingredients, optimizing skin renewal and facilitating deeper --·- --·-reach-of-antifungal-therapy. -L ul iconazo le-acts.as.a pot en t,-broad-s pectrum antifungal ,.targeting __ . -Q) C) Ill D.. Q) -1-- N E.... 0 -LL. -::1' 0 (0 M .N... . ..... ! -::1' 1.1') N 0 !~ .N... . ' """" ."N.".'. ". Ln N 0 ~ CJ,..... "-:-,...o:Q »-'·. ,-7':,-. ~-- . c.~.~~ . ~-- c I CIO 0 the root cause of dennatophytosis, while pramoxine hydrochloride provides rapid relief of pruritus and improves patient comfort, supporting treatment adherence. The strategic combination of tretinoin, luliconazole, and pramoxine in a .flexible cream base enables sustained contact, maximizes local efficacy, and optimizes delivery, absorption, and symptomatic relief. This integrated approach delivers comprehensive, user-friendly advantages for patients with superficial fungal infections, supporting improved eradication, symptom control, and quality of life with minimized adverse effects and complexity compared to monotherapies or systemic regimens.

No. of Pages : 10 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/12/2025
(21) Application No.202541123652 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AIR FOIL MODEL SOLAR POWERED BATTERY ELECTRIC VEHICLE

(51) International classification	:B60L 8/00, H02J 7/35, B60L 11/18, H02J 7/00, B60L 53/51
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)VEERAMALLU VEERA BRAHMANJANEYA PRASAD
2)VEERAMALLU LALITHA DEVI

(57) Abstract :
7. ABSTRACT The present invention relates to an air foil model solar-powered battery electric vehicle (100) designed for enhanced energy efficiency and reduced power consumption. The vehicle comprises a solar panel system (200) with high-efficiency flexible photo-voltaic cells and a solar charger-controller configured to charge a battery pack (220) efficiently under varying sunlight irradiations and panel inclinations. The battery pack (220) supplies power to an electric motor (240) via a motor controller (230) controlling power, torque, and speed according to operational requirements. A battery management system (250) maintains battery health through state estimation, cell balancing, thermal management, and protective measures, while an on-board charger (260) provides backup charging. The vehicle body is designed based on an air foil profile optionally with reduced chord length, to minimize air drag coefficient (Cd) and air drag power. Wheels and wheel air domes are optimized for airflow and rolling resistance reduction. The design reduces battery size, motor rating, and overall vehicle weight, achieving energy savings, extended range, and cost benefits. The figure associated with the abstract is Fig. 1.

No. of Pages : 30 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025

(21) Application No.202541123819 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT BASED WATER PIPELINE BLOCKAGE DETECTION AND ALERT SYSTEM USING FLOW SENSORS FOR REAL TIME ANOMALY DETECTION.

(51) International classification	:F17D 5/06, G01F 1/00, F17D 5/00, G01F 15/06, F17D 5/02	(71)**Name of Applicant :** **1)NANDHA ENGINEERING COLLEGE** Address of Applicant :Erode - Perundurai, Main Road, Vaikkaalmedu, Erode, Tamil Nadu, India, 638052. Tamil Nadu India (72)**Name of Inventor :** **1)T. lndhumathi** **2)I. Gobika** **3)A. Kanishgaa** **4)M. Narmatha**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	:NA :NA	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present invention relates to an Internet of Things (loT)-based water pipeline blockage detection and alarm system that is intended to track water flow in real time and spot early · ndicators of partial or total blockages. The system includes one or more flow rate sensors deployed plong the pipeline to create pulse signals proportional to the flow rate. A microprocessor processes hese data, transforming them into calibrated flow values and continuously comparing them to predetermined thresholds to identify anomalous changes in waterflow. ... The invention includes wireless communication modules to enable seamless transfer of eat-time data and obstruction alerts to remote cloud servers or user interfaces. A dual-alert method ·s used, wherein a local indicator such as an LED gives instant onsite warning, while remote alerts are ~ent over loT connectivity for fast response. Additionally, the technology facilitates continuous data ogging, which makes it possible to examine past flow records for patterns, early alerts, and slow '"orming blocks that might not be immediately noticeable. This invention provides a low-cost, scalable, and non-invasive way to increase the ~ependability and security of water distribution systems in residential, commercial, agricultural, and ~municipal settings. The solution improves preventive maintenance, lowers water loss, and offers an Effective, automated way to manage pipeline health by fusing sensor technologies, embedded processing, loT connection, and cloud-based analytics.

No. of Pages : 7 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025
(21) Application No.202541123820 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN INTELLIGENT SURVEILLANCE ROVER INTEGRATING REAL TIME OBJECT DETECTION WITH LLM BASED SEMANTIC ANALYSIS

(51) International classification	:G08B 13/196, H04N 7/18, B63G 8/00, G08B 25/00, H04L 9/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Modem security is often hindered by old technology: fixed cameras that can only stare at one spot and require constant human attention to spot trouble. These stationary systems create blind spots and, crucially, can't tell the difference between a person harmlessly walking by and a genuine threat, lacking any real context or understanding of a situation. Our project tackles this by introducing ROYE, a compact, mobile surveillance robot ROV-E is built on an affordable Raspberry Pi 5 platform using the flexible ROS 2 framework, and its primary goal is to bring intelligence and mobility to security monitoring. ROY -E's core innovation is its powerful combination of vision and language. ·It uses the cuttingedge YOLOv8 model for high-speed, on-device object detection, quickly identifying items like people, bags, and obstacles in real time. Instead of just reporting coordinates, ROV-E sends this detection data to Google's Gemini API, a cloud-based Large Language Model, which translates the raw sensor data into rich, natural language descriptions. This crucial step allows ROY -E to move beyond simple motion alarms to provide genuine scene understanding and detect uncharacteristic activity, giving operators instant, meaningful context about what the rover is seeing. For movement, ROV-E is designed for tight indoor spaces, utilizing an omnidirectional Mecanum wheel base that allows it to move forward, backward, sideways, and diagonally with high agility. Users control the rover remotely through a simple, responsive React-based web interface that also displays the AI's real-time semantic alerts. This architecture delivers dynamic coverage and intelligent semantic feedback as a low-cost, adaptable alternative to expensive, centralized security systems. We believe. this lays the groundwork for the next stage of robotic security, with plans to integrate LiDAR-based SLAM to transform ROV-E into a fully autonomous patrol agent

No. of Pages : 8 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025
(21) Application No.202541123826 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HOMIGO - A SMART WEB PLATFORM FOR RENTING AND LISTING OF HOUSES

(51) International classification	:G06Q 30/06, G06Q 50/16, G06Q 30/00, H04W 4/02, H04W 4/021
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
HomieGo is an innovative digital rental housing platform designed to simplify the renting process for both property owners and tenants. The system allows house owners to upload detailed rental listings including images, pricing, furnishing status, rules, and accurate geolocation coordinates. Meanwhile, users searching for a house can browse available properties, apply filters, view gallery images with zoom and navigation, and contact the owner directly via WhatsApp or phone call. HomieGo uses HTML, CSS, and JavaScript for the frontend, Node.js for backend logic processing, MongoDB as the database, and AWS cloud infrastructure for hosting, scalability, and security. The system integrates Geolocation API technology to allow precise location sharing of rental properties and improve user decision-making. The platform ensures convenience, reliability, and accessibility, making it an affordable and efficient rental marketplace. HomieGo provides a streamlined digital experience that bridges the communication gap between tenants and house owners, eliminating traditional intermediaries.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025
(21) Application No.202541123858 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM DESIGN AND METHOD OF DEVELOPMENT OF REMOTE MONITORING OF HAZARDOUS ENVIRONMENT AT MINING SITE

(51) International classification	:E21F 17/18, G01D 21/02, H04W 4/38, G08B 21/18, G08B 25/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)MAHESHM R
7)Dr. ROHITH S
8)Dr. H VENKATESH KUMAR

(57) Abstract :
The patent disclosure covers System, Design and Method of Development of Remote Monitoring of Hazardous Environment at Mining Site. This Patent disclosure introduces a wireless environmental and hazard monitoring system specifically designed for remote and hazardous environments, such as mining sites. It used dual microcontroller and LoRa (LongRange) communication to provide real-time monitoring and alerts. The system is split into two units: a transmitter equipped with sensors like gas detector, vibration sensor, and DHT11 for temperature and humidity; and a receiver that triggers alarms and send SMS alerts when abnormal readings are detected. Additionally, a NodeMCU module uploads sensor data to the clouds for logging and remote access. This design ensure early detection of dangerous conditions, enabling prompt preventive action and enhancing safety in applications such as environments, smart homes, and environmental monitoring. Traditional monitoring system are often limited by short-range communication (e.g., Wi-Fi or Bluetooth),lack of internet connectivity, and dependence on wired sensor, which are impractical for large - scale or remote sites. These systems typically rely on basic microcontroller or PLCs without cloud integration, offering only local alerts through buzzers or lights, which may go unnoticed in critical situations. In contrast, the proposed Lora-based system offers a cost-effective, energy-efficient, and scalable solution with long-range wireless capability and cloud integration. By enabling SMS alerts and remote access to real-time data, it significantly improves hazard response times and operational safety, particularly in challenging environments like mines.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025

(21) Application No.202541123870 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Real-Time Embedded Edge-AI Device for EMD-Based Solar Radiation Prediction

(51) International classification	:G06N 3/04, G06N 3/08, G06N 5/04, H02J 3/38, G06N 20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Amit Kumar Yadav

(57) Abstract :
The present invention discloses a real-time embedded edge-AI device for solar radiation prediction using empirical mode decomposition and quantized deep learning inference. The device integrates a solar radiation sensor, signal acquisition unit, preprocessing module, hardware-accelerated EMD engine, IMF selection module, feature extraction module, and a low-power deep learning inference engine within an embedded system architecture. The system operates entirely offline using FPGA, ASIC, or neural processing unit accelerators to enable fast intrinsic mode extraction and low-latency neural prediction. The invention achieves high prediction accuracy under nonlinear and noisy environmental conditions while minimizing power consumption and network dependence. The proposed device is particularly suitable for photovoltaic systems, smart grids, microgrids, and remote environmental monitoring applications where reliable real-time solar radiation forecasting is critical.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025
(21) Application No.202541123879 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MODEL TO UNDERSTAND QUARTER LIFE CRISIS THROUGH MEANING IN LIFE: SELF-COMPASSION AS A MEDIATOR AND SOCIAL SUPPORT AS MODERATOR

(51) International classification	:G09B 19/00, A61B 5/16, G09B 23/28, G06Q 50/00, G09B 19/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The primary aim ofthi~ invention is to provide a psychological model to understand and negate the Quarter-Life Crisis (QLC) by integrating Mem1ing i~ Life, Self-Compassion and Social Support into a unified framework is the n1ain focus of this invention. The model studies the influence or'how meaning has an effeCt during the life stage of early adulthood. Self-compassion functions as a mediator while Social Support is seen to be a moderator. With a sample of I ,850 young adults ranging from 18-39 years of age, the model was validated statistically through mediation and moderation analyses. Results deduced from this model it was eviqent that self-compassion fully mediates the relationship between meaning in life and quarter-life crisis, while social supp01i stJ:engthens the same relationship QY acting as a bt1ffer against distress. As far as applications go, this model ,firmly establishes a scientific ~~ . . foundation aimed at developing interventions, digital assessment tools that reduce emotiqpal turbulence during the transition period.as well as in counselling frameworks. It is applicable . across clinical, educational and organizational settings and promotes emotional regulation,. self-awareness and c01mectedness an1ong peers among young adults. This in turn contributes to improved psychological well-being and overali:public mental health awareness. Keyworcis: Quarter Life Crisis, Self-Compassion, Social Support, Meaning in Life, Young Adults.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025
(21) Application No.202541124293 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYBRID-ENERGY RECOVERY AND KNOCK SUPPRESSION SYSTEM FOR A SPARK IGNITION ENGINE AND ITS METHOD THEREOF

(51) International classification	:F02B 47/02, F02B 47/08, F02B 75/02, F02M 25/022, F02G 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Jinsha Rajeevan
3)Gireesh Kumaran Thampi B S
(72)**Name of Inventor :**
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2)Jinsha Rajeevan
3)Gireesh Kumaran Thampi B S

(57) Abstract :
The present invention relates to a hybrid energy recovery and knock suppression system for a spark ignition (SI) engine. It integrates a two-cylinder SI engine with a double-acting cylinder coupled to linear electromagnetic generators. The system captures exhaust gas energy to generate supplementary electricity while enhancing combustion stability. Exhaust gas enters each chamber of the double-acting cylinder, where it is compressed, and a controlled amount of water is injected near the end of compression. The water absorbs heat, vaporizes into steam, and raises chamber pressure, driving a central piston whose linear motion is converted into electrical power. Sensors monitor exhaust gas temperature and moisture to regulate water injection in real time. A fraction of the expanded steam–gas mixture is recirculated as cooled EGR, lowering in-cylinder temperature and suppressing knock. The dual-mode operation improves efficiency, supports higher compression ratios, and recovers waste heat as usable energy.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025

(21) Application No.202541124496 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Enabled Predictive Safety and Workload Management System for Urban Delivery Workforce

(51) International classification	:G06N 20/00, G06Q 10/06, G06Q 50/26, G08B 21/02, G08B 21/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an AI-enabled predictive safety and workload management system for food delivery executives operating in urban gig services. The system integrates multimodal data from smartphone sensors, wearable physiological sensors, vehicle sensors, and environmental APIs. Advanced machine learning models predict fatigue, psychological stress, accident risk, road hazards, and workload overload in real time. A mitigation engine generates proactive safety interventions including break alerts, safe routing, weather hazard warnings, and behavioral corrections. Predictive analytics are delivered through a mobile-based user interface and enterprise dashboards to improve workforce safety, productivity, and mental well-being. The invention provides an intelligent, scalable, and adaptive framework for reducing accidents, burnout, and operational risk across gig-based delivery platforms.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025
(21) Application No.202541124528 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD OF CONVERTING ORGANIC WASTES INTO VALUE-ADDED PRODUCTS AND A COMPOSITION THEREOF

(51) International classification	:A23L25/00, A23L27/10, A23L 29/30, A23L33/105, A23L5/10, A23P10/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. S. SUMAYA
3)Dr. S. MUTHUMAREESWARI

(57) Abstract :
A method of converting organic wastes into value-added products, and a composition thereof, are disclosed. Said method broadly comprises steps of: drying, milling grape seeds, to obtain a grape seeds powder; roasting and crushing fennel seeds, to obtain crushed fennel seeds; grinding cardamom and cloves, to obtain a cardamom powder and a clove powder; roasting and sifting, to obtain sifted sesame seeds; preparing a palm sugar-rose petals syrup; and blending said grape seeds powder, said crushed fennel seeds, said cardamom powder and said clove powder, tutti frutti; sesame seeds, and said palm sugar-rose petals syrup, followed by mixing, to obtain uniform granules. The disclosed method (and/or composition) offers at least the following advantages and effects: is alcohol-free; improved nutrition profile; provides strong antioxidant activity and antimicrobial potential; offers shelf-life stability; facilitates conversion of organic wastes, into value-added products; and/or facilitates transitioning, towards a circular economy.

No. of Pages : 19 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025
(21) Application No.202541124572 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEMS AND METHODS FOR ADAPTIVE MACHINE-LEARNING–BASED MONITORING AND FAULT DETECTION IN PHOTOVOLTAIC POWER ARRAYS

(51) International classification	:G05B 23/02, G06N 20/00, G06F 11/07, G05B 13/04, G05B 13/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr.N.Karuppiah
4)Dr.T.Anuradha Devi
5)Mr.B.Rajagopal Reddy
6)Dr.Patil Mounica

(57) Abstract :
A system (100) comprising a data acquisition module (102), a sensor network (104), a machine-learning processing unit (106), a communication interface (108), a storage unit (110), an anomaly-detection engine (112), an adaptive model-updating unit (114), a control-signal generator (116), and a user-interface dashboard (118). The data acquisition module (102) receives real-time sensor data, the machine-learning processing unit (106) analyzes the data for faults, and the anomaly-detection engine (112) determines anomaly types while the adaptive model-updating unit (114) updates the models based on new conditions. The control-signal generator (116) issues corrective actions, and the dashboard (118) displays system-health analytics. The invention enhances early detection accuracy, reduces false alarms, and improves overall photovoltaic-array performance and reliability.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/12/2025
(21) Application No.202541124621 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CONSTRUCTION MATERIAL COMPOSITION AND METHOD OF PREPARATION THEREOF

(51) International classification	:C04B 18/30, C04B 18/04, C04B 18/16, C04B 28/02, C04B 111/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)BISWAJYOTI DAS
3)BLESSON SEBASTEIN

(57) Abstract :
The present disclosure relates to a construction material composition comprises: a ternary binder system comprises: an industrial by-product; an agriculture wastes material; and a marine waste material; activator solution comprises: an alkaline activator; and an agriculture waste co-activator. The present disclosure also relates to a method of preparation of a construction material composition comprising: a) mixing of an industrial by-product, an agriculture wastes material, and a marine waste material for a time period ranging from 1 min to 10 min to obtain a ternary binder system; b) adding an agriculture waste co-activator in an alkaline activator to obtain a activator solution; and c) mixing the ternary binder system of step a) with the activator solution of step b) for a time period ranging from 5 min to 15 min to obtain a construction material composition. The construction material of the present disclosure has superior mechanical properties including compressive strength exceeding 40.9 MPa and flexural strength exceeding 6.5 MPa at 28 days while reducing energy consumption and carbon footprint by 70.2% compared to conventional cement systems.

No. of Pages : 36 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/12/2025
(21) Application No.202541124639 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EXTENDED REALITY–ENABLED DECISION SUPPORT SYSTEM (XR-DSS) FOR REMOTE REAL ESTATE INVESTMENT EVALUATION

(51) International classification	:G06Q 50/16, G06T 19/00, G06T 19/20, G06Q 10/06, G06V 20/13
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT EXTENDED REALITY–ENABLED DECISION SUPPORT SYSTEM (XR-DSS) FOR REMOTE REAL ESTATE INVESTMENT EVALUATION The invention discloses an Extended Reality–Enabled Decision Support System (XR-DSS) for remote real estate investment evaluation, integrating XR visualization, drone-based site capture, AI-driven analytics, and blockchain-backed data provenance. The system constructs immersive 3D models of properties using drone imagery and LiDAR data, enabling users to conduct virtual walkthroughs through VR, AR, or MR interfaces. A novel Adaptive Ambient Simulation Engine recreates real-world environmental conditions such as sunlight variation, noise patterns, and traffic density within XR. An AI module generates risk scores, ROI predictions, and compliance assessments, while a Blockchain Property Provenance Ledger ensures the authenticity of documents and historical records. The system supports secure multi-user collaboration and provides a comprehensive digital environment for informed property investment decisions, especially for NRIs and remote investors. Figure-1

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/12/2025
(21) Application No.202541125169 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR GENERATING A PERSONALIZED WELLNESS ROUTINE FOR A USER

(51) International classification	:G06V10/82, G16H50/20, G06N3/08, G16H50/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure discloses a method (400) for generating a personalized wellness routine (106) for at least one user. The method (400) includes receiving a plurality of user-based inputs and generating a multi-label classification of a plurality of skin anomalies based on the image. The method (400) includes computing a skin anomaly score for each facial region. Furthermore, the method (400) includes assessing a compatibility of each of the plurality of cosmetic products based on an application of an ingredient-based compatibility rules on the cosmetic product and multi-modal contextual data associated with the user. Lastly, the method (400) includes generating the personalized wellness routine based on a fusion of the computed skin anomaly score, the fetched adaptive weather data, the assessed compatibility, and the multi-modal contextual data using a domain-specific fusion technique.
No. of Pages : 30 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/12/2025
(21) Application No.202541125182 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR CONTEXT-AWARE THREAT DETECTION BASED ON SPATIAL PRIORITY RISK SCORE

(51) International classification	:G06F40/30, G06F21/55, G06N3/08, G06N20/00, G06V20/52
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)SAI SRAVAN ANANTHABHATLA

(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR CONTEXT-AWARE THREAT DETECTION BASED ON SPATIAL PRIORITY RISK SCORE The present invention discloses an artificial intelligence (AI)-based system and artificial intelligence (AI)-based method for context-aware threat detection based on a spatial priority risk score. The AI-based system (102) classifies an associated monitored area into predefined zones and assigns a corresponding spatial priority weight to each predefined zone based on interpreted semantic relationships. The AI-based system (102) determines objects, persons, and behavioural patterns within the real time visual data. The AI-based system (102) isolates anomalous frames from frames of the real time visual data. The AI-based system (102) extracts a defined length of visual clip surrounding the isolated anomalous frames. The AI-based system (102) generates corresponding visual metadata associated with the defined length of visual clip. The AI-based system (102) generates a threat score based on analysing contextual meaning of activities. The AI-based system (102) computes the spatial priority risk score to determine the context-aware threat detection. Figure 2A

No. of Pages : 68 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/12/2025
(21) Application No.202541125234 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CLAY-BIOPOLYMER COMPOSITE HYDROGELS

(51) International classification	:C08J 3/075, C09K 17/40, C08K 3/34, C05G 3/80, C09K 17/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Nidhi Murali

(57) Abstract :
ABSTRACT CLAY-BIOPOLYMER COMPOSITE HYDROGELS The present disclosure generally pertains to the field of polymer-based hydrogel technology. In particular, the present disclosure pertains to clay-biopolymer composite hydrogels and a process for its preparation. The hydrogel of the present disclosure slowly releases clay into arid 5 soil on decomposition, thus improving the water holding capacity of the soil. The hydrogel of the present disclosure provides a safe way of enriching agricultural soil.
No. of Pages : 35 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/12/2025
(21) Application No.202541125300 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DIGITAL TWIN SYSTEM AND METHOD FOR PREDICTING HEALTH PARAMETERS OF A PHYSICAL BATTERY

(51) International classification	:G01R31/392, G01R31/367, G01R31/36, H01M10/48, G01R31/382
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)JOHN, Preetha Roselyn
4)UTHAYAKUMAR, Sowmmiya
5)DURAIRAJ, Devaraj
6)SETHURAMAN, Ramesh
7)RAMAKRISHNAN, Balaji

(57) Abstract :
A method (1200) for predicting one or more health parameters of a physical battery (104) coupled with a digital twin system (102) is disclosed. The method includes receiving, using a digital twin engine (108) within the digital twin system, one or more real-time parameters of the physical battery from a sensory array (106). Further, the method includes generating, using the digital twin engine, one or more twin parameters. The method includes determining, using the digital twin engine, a residual error in at least one of the one or more twin parameters. In addition, the method includes determining if the residual error in at least one of the one or more twin parameters is above a threshold value. The method includes adjusting the one or more twin parameters when the determined residual error is above the threshold value. The method includes predicting the one or more health parameters.

No. of Pages : 39 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/12/2025
(21) Application No.202541125322 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SAFETY ARMOUR SYSTEM FOR HEAVY-DUTY VEHICLES

(51) International classification	:B60R19/56, B60R19/02, B60R19/20, B60R19/24, B62D21/15
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)PUTHUR, Anson

(57) Abstract :
The present disclosure relates to a safety armour system (100) for vehicles, to prevent underride of smaller colliding vehicles and absorb collision energy. The system (100) includes a crossbar (102) positioned at a height relative to ground to block underride, telescopic cylinders (104) each having a first end (106) connected to crossbar (102) and a second end (108) connected to blocks (110) fixed to vehicle chassis (112). Pressure release valves are integrated within telescopic cylinders (104) to control rate of compression during impact. The crossbar (102), telescopic cylinders (104), blocks (110), and pressure release valves are mechanically and functionally connected to transfer collision forces to telescopic cylinders (104), which compress and dissipate energy through regulated fluid or air discharge. The system (100) can be mounted at front, rear, or side portions of vehicle, providing modular adaptability and enhanced occupant safety while mitigating collision severity.

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126512 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TRANSFORMING PUBLIC ADMINISTRATION THROUGH SMART CIVIC ENGAGEMENT IN THE DIGITAL AGE

(51) International classification	:G06Q 50/26, G06F 16/27, H04L 9/32, G06F 16/23, G06F 16/901
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)Tejas Mahesh

(57) Abstract :
ABSTRACT OF THE INVENTION Title: Transforming Public Administration Through Smart Civic Engagement in the Digital Age The invention relates to an intelligent civic engagement platform that transforms public administration through digital technologies, enabling seamless interaction between citizens and government entities while ensuring transparency, efficiency, and inclusive participation. The system comprises an AI-powered virtual assistant supporting multilingual natural language interactions, a blockchain-based transparency layer ensuring immutable audit trails and public accountability, an integrated service delivery system connecting multiple government departments, a real-time analytics engine enabling data-driven policy making, a secure digital identity management system with federated architecture, a citizen participation portal facilitating democratic engagement, accessible multimodal interfaces, and automated workflow systems reducing administrative burdens. The present invention ensures improved citizen access to government services through 24/7 availability and multiple interaction channels, enhanced transparency in governance through blockchain-based record keeping, increased efficiency in service delivery through intelligent automation, better policy outcomes through data-driven decision making, greater citizen participation in democratic processes through accessible engagement mechanisms, and strengthened trust between citizens and government institutions through transparent, responsive, and accountable public administration.

No. of Pages : 20 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126513 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Beyond the Smile: A Machine Learning Breakthrough in Dental Disease Detection

(51) International classification	:G06T7/00, G06N3/0464, G06N5/045
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Rahul R
6)Preethesh Kumar U

(57) Abstract :
ABSTRACT OF THE INVENTION Title: Beyond the Smile: A Machine Learning Breakthrough in Dental Disease Detection The invention relates to an integrated artificial intelligence–based system for automated dental image analysis, radiographic abnormality detection, and clinical report generation using multi-modal deep learning and explainable AI technologies. The system comprises of a CNN-based disease classification module for realworld dental photographs, a YOLO-based object detection module for dental radiographs, an automated Smart Auto-Detect image-type identification unit, a real-time webcam capture interface, an explainable-AI engine powered by a generative language model, and a PDF report generator for producing standardized medical reports. The present invention ensures comprehensive, accurate, and real-time dental diagnostic support by integrating multiple AI models into a unified platform, enabling automatic workflow routing, clinically interpretable explanations, annotated imaging, and end-to-end digital report generation for use in clinics, teledentistry, and large-scale screening environments.

No. of Pages : 16 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025

(21) Application No.202541126514 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Driven Multi-Modal Crop Market Price Prediction System

(51) International classification	:G06Q 50/02, G06Q 30/02, G06Q 10/04, G06N 3/08, G06N 3/04	(71)**Name of Applicant :** **1)Dayananda Sagar Academy of Technology and Management** Address of Applicant :Dayananda Sagar Academy of Technology and Management , Bangalore principal@dsatm.edu.in 8951890085 Karnataka India **2)Ruchita Singhania** **3)Patil Yash Laxman** **4)Mohammed Yahiya Khan** **5)Tejas R S**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	(72)**Name of Inventor :**
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(87) International Publication No	: NA	**2)Ruchita Singhania**
(61) Patent of Addition to Application Number	:NA	**3)Patil Yash Laxman**
Filing Date	:NA	**4)Mohammed Yahiya Khan**
(62) Divisional to Application Number	:NA	**5)Tejas R S**
Filing Date	:NA	

(57) Abstract :
ABSTRACT OF THE INVENTION Title: AI-Driven Multi-Modal Crop Market Price Prediction System The invention relates to a system for predicting agricultural crop prices using artificial intelligence. The system comprises multimodal data inputs, preprocessing pipelines, and hybrid AI models capable of capturing non-linear market interactions. The present invention ensures improved accuracy, real-time forecasting, and enhanced decision-making for farmers and stakeholders in the agricultural supply chain.
No. of Pages : 15 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126515 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT LOST AND FOUND SYSTEM USING IMAGE PROCESSING AND OPTICAL CHARACTER RECOGNITION

(51) International classification	:G06V 30/10, G06K 9/00, G06K 9/62, G06V 30/224, G06K 9/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION Title: Intelligent Lost and Found System using Image Processing and Optical Character Recognition The invention relates to an intelligent lost and found management system that utilizes image processing and optical character recognition technologies to automate the identification, categorization, and matching of lost items with their owners. The system comprises an image capture subsystem for photographing found items, an image processing module for extracting visual features, an OCR engine for extracting textual information, a classification engine for automatic categorization, a database for storing structured records, a matching algorithm engine for calculating multi-dimensional similarity scores between lost and found items, and a notification system for alerting users of potential matches. The present invention ensures significantly reduced manual labor in lost and found operations, improved matching accuracy through automated feature extraction, enhanced user accessibility via web and mobile interfaces, faster item recovery through intelligent matching and real-time notifications, and increased overall recovery rates compared to traditional manual systems.

No. of Pages : 17 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126516 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Enhanced Text Extraction from Images using CNN-Assisted Image Preprocessing and OCR Techniques

(51) International classification	:G06V 30/10, G06N 3/04, G06N 3/08, G06K 9/20, G06V 30/148
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION Title: Enhanced Text Extraction from Images using CNN-Assisted Image Preprocessing and OCR Techniques The invention relates to an advanced system and method for enhanced text extraction from images using a combination of CNN-assisted preprocessing and optimized OCR techniques. The system comprises of a configurable enhancement selection module that applies basic, advanced, or high-contrast image enhancement operations, including contrast adjustment, CLAHE, bilateral filtering, adaptive contrast, and noise reduction. The system further comprises of an optional CNN-based enhancement module designed to intelligently refine image features and improve text clarity before OCR processing. After enhancement, an OCR engine performs text recognition followed by an optional export or post-processing stage. The present invention ensures high-accuracy text extraction, even from low-quality, noisy, blurred, shadowed, or low-contrast images, by adaptively selecting enhancement methods and leveraging deep-learning models. This integrated approach improves character recognition reliability across printed, handwritten, multilingual, and real-world image datasets, making it suitable for document digitization, mobile scanning, automated data entry, and assistive technologies.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126517 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Self-Adaptive Machine Learning–Based Cyber Defense Framework for Secure IoT Ecosystems

(51) International classification	:H04L 29/06, G06N 20/00, H04L 9/40, G06F 21/55, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A self-adaptive meta-learning–based cyber defense framework for secure Internet of Things (IoT) ecosystems (AMID-IoT) is disclosed. The framework provides intelligent detection, classification, and autonomous mitigation of cyber threats in heterogeneous and resource-constrained IoT networks. A base intrusion detection and security model is initially trained using diverse IoT network traffic and attack datasets to learn generalized threat representations, wherein the base model is optimized using a model-agnostic meta-learning (MAML) approach to enable rapid adaptation. Upon deployment in a target IoT environment, the base model is adaptively fine-tuned using limited, environment-specific data through few-shot learning to generate a context-aware intrusion detection system capable of identifying malicious activities and anomalous behavior in real time with high accuracy. The framework supports edge-level and gateway-level deployment to ensure low-latency monitoring while minimizing computational and energy overhead on IoT devices. Upon detection of a threat, adaptive defense actions including dynamic access control modification, traffic isolation, device quarantine, and security policy enforcement are autonomously triggered. A continuous learning module periodically updates the model using newly observed network data and evolving attack patterns, thereby reducing false positives, maintaining detection accuracy, and ensuring long-term resilience and robustness of the cyber defense framework against emerging threats.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025

(21) Application No.202541126518 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A RAPID ENZYME-ASSISTED FOOD PRESERVATION METHOD USING PULSED THERMAL CONTROL

(51) International classification	:A23B2/05, A23B2/729
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)ARUMUGAM JEEVAN
7)A.MARIYA ANJELIN
8)C.DEARUNA
9)B.POOJAPRIYA

(57) Abstract :
The invention reveals a quick enzyme-aided preservation food system with pulse thermal control to efficiently destroy microbes and maintain food nutrients. The enzymes of choice cause disruption of the cell structure of microbial cells and this is followed by short bursts of heat which disable microorganisms without any long-term heat exposure. Quick cooling avoids enzyme damage, and halts the enzyme activity. The integrated solution shortens processing time and loss of nutrients, and preservation efficiency of the food and thus the technique is appropriate in industrial food processing and producing high-quality preserved foods.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126519 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IoT-Enabled Real-Time Transport Tracking and Incident Monitoring System

(51) International classification	:G08G 1/00, H04W 4/029, G08G 1/123, H04L 29/08, G08G 1/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Ms. S. Gayathri

(57) Abstract :
Road transport operations continue to face serious safety and monitoring challenges, with more than 65 % of incidents remaining unreported in real time and over 40 % of fleet operators still relying on manual phone calls or logbooks for incident reporting. In addition, approximately 55 % of operational delays are attributed to the lack of predictive monitoring and unified real-time tracking systems. To address these limitations, the present invention proposes an IoT-enabled real-time transport tracking and incident monitoring system that integrates GPS-based location tracking, sensor-based event detection, cloud-based data processing and automatic alert generation within a unified mobile/web platform. The system continuously monitors vehicle movement and detects abnormal events such as sudden impacts, unauthorised route deviations or emergency situations, and automatically sends real-time notifications to authorised users along with the vehicle's location and event details. Implementation of the proposed system in simulated transport scenarios demonstrated significantly improved response times and increased reporting efficiency, reducing the delay in incident notification by over 75 %, thereby enhancing the overall safety and operational effectiveness of transport fleet management.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126521 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Hybrid Quantum Evolutionary Flamingo Algorithm Incorporating Multi-Objective Pareto Dynamics for High-Dimensional Feature Selection Stability

(51) International classification	:G06N 10/00, G06N 10/20, G06N 99/00, G06K 9/62, G06N 10/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention reveals a Hybrid Quantum Evolutionary Flamingo Algorithm (HQ-EFA) to be used in high dimensional stability of feature selection in biomedical and complex data. It combines encoding to feature qubit based feature encoding with quantum superposition using adaptive amplitude rotation and entanglement driven crossover and Flamingo inspired exploration and migration mechanisms. Multi-objective Pareto optimization is used to provide a strong Pareto front of candidate solutions, which multi-objective Pareto optimization achieves at the same time considering classification accuracy, subset dimensionality, redundancy, and stability. Specialized quantum operators can increase the search diversity and reduce premature convergence and stability aware ranking can be used to ensure that the subsets of features associated with reliability and biologically relevant are selected. Surrogate classifiers, archival memory, and inter-flock communication are also included in the invention to speed up convergence and preserve diversity of populations. The HQ-EFA system is applicable to genomic, radiomic, IoT-health, and ultra-high-dimensional data and offers small, interpretable and high-performing collections of features with repeatable stability. This quantum-evolutionary model is highly scalable, convergent and consistent in its selection, much better than traditional metaheuristics.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126522 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BITUSENSE: IOT-ENABLED SMART BITUMINOUS ROADS FOR REAL-TIME MONITORING AND PREDICTIVE MAINTENANCE

(51) International classification	:G06N 20/00, G08G 1/01, G06Q 10/00, G08B 21/18, G06Q 50/26
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to an IoT-enabled smart bituminous pavement monitoring system, referred to as BituSense, for real-time assessment and predictive maintenance of road infrastructure. The system integrates embedded multi-parameter sensors within pavement layers, an edge processing unit for local data handling, wireless communication for data transmission, and a cloud-based analytics platform employing machine-learning models. Continuous monitoring of structural, environmental, and traffic-related parameters enables early detection of pavement distress, generation of alerts, and data-driven maintenance planning. The invention enhances road safety, extends pavement service life, and reduces lifecycle maintenance costs through proactive and predictive infrastructure management

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126523 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENABLING THE EFFICIENCY OF CONCRETE USING CFRP COMPOSITES

(51) International classification	:E04G 23/02, E04C 5/07, E04B 1/64, E04C 5/01, E04C 2/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Mr.A.Thomas Eucharist

(57) Abstract :
The invention relates to a method and system for enabling the efficiency of concrete structures using Carbon Fiber Reinforced Polymer composites. CFRP sheets, laminates, strips, rods, or wraps are externally bonded or near-surface mounted onto concrete members to enhance flexural strength, shear resistance, axial confinement, ductility, and durability. The method includes surface preparation, application of CFRP composites using compatible adhesives, and performance validation through structural testing. The invention provides a lightweight, corrosion-resistant, and sustainable strengthening solution for rehabilitation, retrofitting, and upgrading of concrete infrastructure

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126524 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INCREASING THE EFFECTIVENESS OF CONCRETE USING GFRP COMPOSITES

(51) International classification	:E04C 5/07, E04G 23/02, E04C 5/01, E04B 1/64, E04C 2/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Dr.P.Prasanthni

(57) Abstract :
The invention relates to a method and system for increasing the effectiveness of concrete structures using Glass Fiber Reinforced Polymer composites. GFRP bars, sheets, laminates, strips, rods, or wraps are integrated with concrete as internal reinforcement, external strengthening, or near-surface mounted reinforcement to enhance tensile strength, flexural capacity, crack resistance, durability, and service life. The method includes appropriate surface preparation, bonding, and curing to ensure composite action. The invention provides a lightweight, corrosion-resistant, and sustainable alternative to conventional reinforcement and strengthening techniques for concrete infrastructure

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126525 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AIDING THE EFFICACY OF CONCRETE USING AFRP COMPOSITES

(51) International classification	:E04C 5/07, E04G 23/02, E04B 1/64, E04C 5/01, E04C 2/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Dr.P.Sudha

(57) Abstract :
The invention relates to a method and system for aiding the efficacy of concrete structures using Aramid Fibre Reinforced Polymer composites. AFRP sheets, laminates, strips, rods, or wraps are externally bonded, near-surface mounted, or used for confinement of concrete members to enhance flexural strength, shear resistance, axial capacity, ductility, fatigue and impact performance, and long-term durability. The method includes appropriate surface preparation, bonding, and curing to ensure composite action. The invention provides a lightweight, corrosion-resistant, and sustainable strengthening solution for rehabilitation, retrofitting, and upgrading of concrete infrastructure.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025

(21) Application No.202541126526 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Resolving a real process gap to provide low-cost insurance coverage for Unreserved Train Passengers through technical application integrations.

(51) International classification	:G06Q 40/08, B61D 37/00, G06Q 40/00, G06Q 50/30, B61D 49/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
To provide affordable travel insurance to unreserved train passengers in India, ensuring financial protection in case of accidents.

No. of Pages : 16 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202541126527 A
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(54) Title of the invention : DEEP REINFORCEMENT LEARNING FOR ENERGY-EFFICIENT SMART GRIDS

(51) International classification	:H02J 3/00, H02J 3/46, H02J 3/38, H02J 3/14, G06Q 50/06
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Deep Reinforcement Learning for Energy-Efficient Smart Grids is the proposed invention. The proposed invention focuses on understanding the functions of Smart Grids. The present invention discloses a deep reinforcement learning (DRL)-based control framework for achieving energy-efficient, reliable, and adaptive operation of smart grids. The system utilizes multi-agent DRL models that dynamically analyze real-time grid conditions, distributed energy resource (DER) status, and short-term forecasts of demand and renewable generation to make optimal control decisions for energy distribution, storage scheduling, and demand-side management. A hierarchical coordination structure ensures that both global grid objectives and local operational constraints are addressed simultaneously.

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(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED ROBOTIC SURGERY ASSISTANCE SYSTEM

(51) International classification	:A61B 34/30, A61B 34/00, A61B 34/20, A61B 34/37, B25J 9/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(57) Abstract :
AI-Powered Robotic Surgery Assistance System is the proposed invention. The proposed invention is an AI-powered robotic surgery assistance system designed to enhance precision, safety, and decision-making during minimally invasive medical procedures. The system combines advanced computer vision, deep learning models, and surgical robotics to interpret real-time visual and physiological data within the operating field. It assists surgeons by providing intelligent guidance, including tissue classification, tool trajectory prediction, risk alerts, and optimal procedural suggestions. A robotic arm with haptic feedback executes movements with sub-millimeter accuracy, closely synchronized with surgeon control to reduce human error and fatigue. By dynamically adapting to patient-specific anatomy and intraoperative changes, the system ensures consistent surgical quality, minimizes invasiveness, and improves overall patient outcomes. This technology represents a transformative step toward smarter, faster, and safer surgical operations in modern healthcare environments.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202541126529 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOFT ROBOTICS GRIPPER CONTROL USING AI-BASED TACTILE FEEDBACK

(51) International classification	:B25J 13/08, B25J 9/16, B25J 15/00, B25J 15/08, B25J 15/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Soft Robotics Gripper Control Using AI-Based Tactile Feedback is the proposed invention. The proposed invention is an AI-powered soft robotic gripper control system that utilizes tactile feedback for precise, adaptive, and safe object manipulation. The system combines compliant soft robotics with embedded high-resolution tactile sensors to detect pressure, texture, and slippage in real time. Machine learning algorithms analyze this sensory data to predict optimal grip parameters including contact force, finger positioning, and deformation strategies allowing dynamic adjustment to objects of varying sizes, shapes, and fragility. The AI-driven control commands are executed by flexible actuators, forming a closed-loop system that continuously adapts to environmental changes and object behavior. This technology enables robust handling of delicate and irregular items, improves industrial and assistive robotic applications, reduces operational errors, and enhances overall manipulation efficiency, reliability, and safety.

No. of Pages : 15 No. of Claims : 3

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(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126530 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI-ROBOT COLLABORATIVE WAREHOUSE MANAGEMENT SYSTEM

(51) International classification	:G06Q 10/08, G05D 1/02, B65G 1/137, B25J 9/16, B65G 1/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Multi-Robot Collaborative Warehouse Management System is the proposed invention. The proposed invention is a Multi-Robot Collaborative Warehouse Management System designed to automate key logistics operations such as item picking, sorting, transportation, and shelving within warehouse environments. The system utilizes a fleet of autonomous mobile robots equipped with intelligent navigation, sensing, and communication modules to collaboratively execute tasks while avoiding collisions and minimizing idle time. A centralized or distributed control framework allocates tasks dynamically based on operational requirements, robot availability, proximity, and energy status, ensuring efficient workload distribution and rapid response to order demands. Integrated inventory identification technologies such as RFID and computer vision enable accurate tracking and placement of goods throughout warehouse operations. The system further incorporates adaptive learning algorithms for continuous optimization of routing, traffic flow, and task scheduling. Through synchronized robot interactions, improved real-time decision-making, and reduced dependence on manual labor, the invention significantly enhances warehouse productivity, operational accuracy, safety, and scalability for modern logistics applications.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126531 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART ENERGY HARVESTING CIRCUIT FOR WEARABLE ELECTRONICS

(51) International classification	:H02J50/00, H02J50/20, H02J7/00, H02N2/18, H02J7/35, G05F1/67
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Smart Energy Harvesting Circuit for Wearable Electronics is the proposed invention. The proposed invention invention presents a Smart Energy Harvesting Circuit designed to provide continuous and sustainable power for wearable electronic devices by efficiently converting ambient energy into usable electrical power. The system integrates multiple energy harvesting sources, including motion-based generators, photovoltaic cells, thermoelectric elements, and radio-frequency receivers, into a unified low-power management circuit. Advanced rectification and boost conversion modules, combined with an intelligent maximum power point tracking (MPPT) algorithm, enable efficient energy extraction even from weak or fluctuating inputs. The harvested energy is regulated and stored in miniature batteries or supercapacitors, while a smart distribution mechanism prioritizes power delivery to essential device operations. Through real-time monitoring and adaptive switching between energy sources, the invention ensures reliable operation of wearable electronics with reduced dependency on frequent battery charging. This solution enhances device longevity, user comfort, and sustainability, making it highly suitable for healthcare wearables, smart textiles, fitness trackers, and next-generation portable electronics.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
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(43) Publication Date : 06/02/2026

(54) Title of the invention : NeuroSymbolic Meta-Cognition Engine for Advanced Logical Reasoning in AI

(51) International classification	:G06N 5/04, G06N 5/02, G06N 3/04, G06N 3/08, G06N 20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention offers a NeuroSymbolic Meta-Cognition Engine which improves sophisticated reasoning of artificial intelligence systems by incorporating neural representation learning into symbolic inference and meta-cognitive assessment. The system is made of a neural embedding encoder, symbolic inference engine, meta-cognition controller, multi-step reasoning orchestrator and knowledge graph integration module. A combination of these elements facilitates deductive, inductive, and abductive reasoning and permits self-reflective analysis, confirming and refuting, as well as correcting reasoning. Inference pathways are monitored by the meta-cognition engine to obtain outputs of transparent, reliable and logically consistent reasoning. The invention overcomes constraints of current AI systems by adding structured multi step inferences as well as symbolic grounding and introspective evaluation loops. Such applications are decision-support systems, autonomous agents, scientific analysis, diagnostic systems, and explainable AI systems.

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(19) INDIA
(22) Date of filing of Application :14/12/2025

(21) Application No.202541126534 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Predictive Irrigation Automation System Using Machine Learning and Cloud-Enabled Sensor Networks

(51) International classification	:A01G 25/16, G06N 20/00, G06Q 50/02, G05B 15/02, G05B 19/418
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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4)Mr. M.Ramesh Kumar
5)Dr Prabhakara Sharma. Pidatala
6)Dr. M. Saravanan

(57) Abstract :
Predictive irrigation automation system using machine learning and cloud-enabled sensor networks Abstract: The present invention relates to an intelligent irrigation automation system that optimizes water usage using machine learning and cloud-connected Internet of Things (IoT) devices. The system comprises distributed soil moisture, temperature, humidity, and weather sensors that continuously collect real-time field data and transmit it to a cloud platform. A machine learning engine analyzes historical and real-time data to predict crop water requirements and dynamically generate irrigation schedules. Automated control valves execute irrigation decisions without manual intervention, while a cloud-based dashboard enables remote monitoring and control. The system adapts to environmental variations, crop type, and soil conditions, thereby reducing water wastage, improving crop yield, and enhancing sustainability in agricultural operations. The invention is scalable, energy-efficient, and suitable for precision agriculture applications.
No. of Pages : 7 No. of Claims : 1

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(19) INDIA
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(21) Application No.202541126535 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Synthesis of Bio-renewable Acetals and Ketals using Biopolymer-based Heterogeneous Acid Catalysts

(51) International classification	:C07C41/56, C07C41/50, B01J31/06, B01J31/02, C01B1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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3)Saikat Dutta

(57) Abstract :
Title: Synthesis of Bio-renewable Acetals and Ketals using Biopolymer-based Heterogeneous Acid Catalysts A method of developing two biopolymer-derived heterogeneous acid catalysts for the sustainable synthesis of bio-renewable acetals and ketals. A Cellulose sulfuric acid (CSA) is synthesized by sulfonating microcrystalline cellulose and protonated κ-carrageenan (kCH) is produced by proton-exchange with a mineral acid. The CSA is efficiently catalyzed the ketalization of ethyl levulinate with diols to afford levulinate ketals in 94-98 % yield, while kCH catalyzed the acetalization of furfural with diols, giving 84-92% yield of cyclic acetals. The CSA and kCH catalysts exhibited excellent recyclability and are interchangeable for acetalization and ketalization, enabling flexible and greener reaction pathways. Overall, the catalysts, chemically-modified biopolymers are used as efficient and sustainable catalysts for organic transformations.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202541126536 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Ultrasonic-Assisted Underwater Cooling System for CMT-Based Wire-ARC Additive Manufacturing of Metallic Components

(51) International classification	:B23K9/04, B23K9/173, B33Y10/00, B33Y30/00, B33Y40/00, B33Y80/00, B33Y99/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Title: Ultrasonic-Assisted Underwater Cooling System for CMT-Based Wire-ARC Additive Manufacturing of Metallic Components
The proposed disclosure presents an ultrasonic-assisted underwater cooling system integrated with Cold Metal Transfer (CMT) Wire Arc Additive Manufacturing (WAAM) to address heat-related and microstructural limitations in metallic additive manufacturing. The system immerses the build component fully in a coolant bath throughout deposition, supported by a recirculating cooling loop that maintains stable near-room-temperature conditions for rapid and uniform heat extraction. A synchronized piston lowers the substrate by each layer thickness, ensuring continuous submersion. Simultaneously, an ultrasonic probe positioned beneath the substrate introduces high-frequency vibrations into the melt pool to promote grain nucleation, refine microstructure, collapse trapped gases, and reduce porosity and residual stresses. Together, these mechanisms enable fine-grained, homogeneous, high-strength components with improved dimensional accuracy and reduced post-processing requirements. The invention is particularly suited for heat-sensitive metals such as magnesium and aluminum and supports advanced aerospace, automotive, and biomedical manufacturing applications.
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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202541126538 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Portable Diagnostic Kit for Offline Imaging and Early Detection of Lung and Chest Diseases in Remote and Low-Resource Regions

(51) International classification	:G06N 3/04, G16H 50/20, G06N 3/08, G06T 7/00, G06K 9/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Title: Portable Diagnostic Kit for Offline Imaging and Early Detection of Lung and Chest Diseases in Remote and Low-Resource Regions The technology discloses a portable, AI-enabled diagnostic kit for real-time, offline detection of lung and chest diseases such as tuberculosis, pneumonia, COPD, and lung cancer, specifically designed for rural, tribal, and remote regions lacking imaging infrastructure and specialist support. The kit integrates a digital chest-imaging sensor, a microcontroller-based acquisition interface, an embedded edge-AI processor, and a mobile visualization module within a rugged, battery–solar-powered enclosure. Chest images are pre-processed, segmented, and classified using a hybrid Convolutional Neural Network and Vision Transformer model, generating diagnoses in under two seconds with high accuracy. Grad-CAM heatmaps provide interpretable visual evidence for non-specialist healthcare workers. All data are encrypted and stored locally with optional cloud or blockchain synchronization. Experimental validation demonstrates accuracy of 91.2%, specificity of 93.1%, and reliable operation under field conditions. The disclosure enables accessible, low-cost, and explainable pulmonary screening in underserved healthcare environments

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(21) Application No.202541126539 A
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(54) Title of the invention : Real-Time Deep Learning Based Intelligent Inspection System and Method for Textile Manufacturing Processes

(51) International classification	:G06T 7/00, G06T 5/00, G06N 3/08, G06V 10/25, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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5)Ravish Aradhya H V

(57) Abstract :
Real-Time Deep Learning Based Intelligent Inspection System and 5 Method for Textile Manufacturing Processes A real-time deep learning based intelligent inspection system (100) and method (400) for textile manufacturing processes is provided. The system (100) includes one or more high-resolution industrial cameras (102A-102C), a training and testing module (104), and a processor (106). The 10 cameras (102A-102C) continuously capture test images across the spinning, the weaving, and the fabrication processes. The training and testing module (104) is configured to preprocess the image data set for noise reduction, contrast enhancement, normalization, and region-of-interest extraction to optimize the image data set for analysis. The training and testing module (104) is configured to feed the preprocessed image data sets to an AI-based defect detection and classification module to 15 accurately identify and classify various defects. Processor (106) is configured to trigger appropriate control actions. The appropriate control actions include alerting operators, marking defective regions, or adjusting machine parameters through PLC.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126546 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Intelligent Edge-IoT Framework to Monitor Environmental Changes and Predictive Analysis

(51) International classification	:H04L 29/08, G06N 20/00, H04W 4/38, G01D 21/02, H04L 12/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to an intelligent environmental monitoring system that integrates edge computing with Internet of Things (IoT) technologies to acquire, process, and analyze environmental data in real time. The system consists of distributed sensor nodes deployed across a target field, each equipped with microcontrollers, multi-parameter environmental sensors, and edge-processing capability to filter, aggregate, and preprocess data at the source. An IoT communication layer transfers optimized data packets to a cloud-based analytics platform for long-term storage, visualization, and predictive analysis. The invention incorporates machine learning algorithms at both the edge and cloud layers to detect abnormal environmental changes, identify trends, and generate early warnings for critical conditions such as temperature rise, humidity variation, air quality degradation, or hazardous gas formation. The framework supports adaptive sampling, energy-efficient communication, secure data transmission, and modular scalability for agricultural, industrial, and urban monitoring applications. The system provides an end-to-end intelligent solution for environmental assessment, anomaly detection, and future condition prediction, thereby enabling timely decision-making and improved resource management.

No. of Pages : 10 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126547 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-ENABLED SYSTEM FOR RISK AND RETURN ANALYSIS OF EQUITY STOCKS IN FMCG SECTOR USING MACHINE LEARNING AND PREDICTIVE VOLATILITY MODELLING

(51) International classification	:G06Q 40/00, G06Q 40/04, G06Q 40/06, G06N 3/04, G06N 3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides an AI-enabled system for automated risk and return analysis of equity stocks, with specific focus on the Fast-Moving Consumer Goods (FMCG) sector. The system integrates real-time data acquisition, statistical computation, and machine learning-based forecasting into a unified analytical framework. A preprocessing module cleans and structures market data, while a statistical engine calculates key financial indicators such as mean return, standard deviation, skewness, kurtosis, variance, and beta. An AI-powered prediction engine using LSTM, ARIMA, Random Forest, and SVM models forecasts future returns and volatility patterns. A volatility identification module detects anomalies using clustering and deviation analysis. A recommendation engine generates customized investment guidance based on investor risk profiles. The system displays insights through an interactive dashboard. The invention enhances investment decision-making by providing accurate, real-time, and predictive financial analytics, surpassing traditional manual methods in speed, precision, and reliability.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202541126548 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEEP LEARNING-DRIVEN FRAMEWORK FOR REAL-TIME MALWARE DETECTION IN DESKTOP AND WEB APPLICATIONS

(51) International classification	:G06N 3/04, G06F 21/56, H04L 29/06, G06N 3/08, H04L 9/40
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(32) Priority Date	:NA
(33) Name of priority country	:NA
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a deep learning-driven framework for real-time malware detection in desktop and web applications. The system collects multi-source data including application files, process logs, network traffic, web scripts, API calls, and user behavior patterns, and analyzes the data using deep learning models such as convolutional neural networks, recurrent neural networks, and transformer-based architectures. The framework detects known, polymorphic, and zero-day malware in real time, generating instant alerts and triggering automated mitigation actions. An anomaly detection and feedback module continuously updates the AI models to improve detection accuracy and reduce false positives. Real-time dashboards, analytics, and reporting modules provide administrators with actionable insights and risk assessments. The system supports cross-platform deployment across desktops, web applications, and cloud environments, offering a scalable, adaptive, and robust malware detection solution.

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126549 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR AI-POWERED AUTONOMOUS CLOUD HARDENING USING REINFORCEMENT LEARNING IN ZERO TRUST ARCHITECTURES

(51) International classification	:G06N 20/00, H04L 29/06, G06F 21/57, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides a system and method for autonomous cloud hardening that integrates reinforcement learning with zero trust architectural principles to dynamically strengthen security configurations. The system collects cloud telemetry, analyzes identity behavior, evaluates configuration states, and identifies risk factors through a reinforcement learning engine that generates optimized hardening actions. A zero-trust enforcement controller verifies that each action complies with identity centric and continuous verification requirements, while a digital twin simulation environment validates all actions for operational safety before deployment. A policy orchestration module applies the validated changes across cloud platforms and monitors for drift or emerging threats, thereby enabling a continuous self-learning and self-optimizing security mechanism that maintains a resilient and compliant cloud environment without human intervention.

No. of Pages : 19 No. of Claims : 9

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(21) Application No.202541126551 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : THE IMPACT OF INTERNATIONAL MANAGEMENT ON BUSINESS CULTURE

(51) International classification	:G06Q 10/06, G06Q 10/10, G06Q 50/20, G06N 20/00, G06Q 10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a system and method for analyzing the impact of international management on business culture in multinational organizations. The system collects structured and unstructured data from employees, managers, and operational records across multiple international offices, including performance metrics, engagement surveys, attendance logs, project outcomes, and feedback. An AI-powered analytics engine evaluates cultural alignment, leadership effectiveness, team dynamics, and employee engagement to identify patterns, predict potential risks, and detect misalignments caused by international management practices. A recommendation engine generates actionable strategies for leadership adjustments, communication improvements, training programs, team restructuring, and engagement initiatives. Real-time dashboards display metrics, trends, and alerts, while continuous learning modules refine predictive models and recommendations based on outcomes. The system enables data-driven management decisions that enhance cultural integration, employee retention, team performance, and overall organizational effectiveness across diverse international environments.

No. of Pages : 18 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126553 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : THE INFLUENCE OF ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS ON BUSINESS OPERATIONS

(51) International classification	:G06Q 10/06, G06Q 10/10, G06Q 10/00, G06N 5/04, G06F 3/0484
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides an advanced enterprise resource planning system designed to optimize business operations through intelligent data integration, automated workflows, predictive analytics, and real time operational visibility. The system includes a centralized integration engine for consolidating enterprise data, a workflow automation module for executing rule-based tasks, an intelligent analytics processor for generating predictive insights, a customizable configuration layer for adapting workflows, a real time monitoring interface for displaying synchronized operational metrics, and an interoperability module for integrating external systems. The invention improves operational efficiency, reduces manual intervention, enhances decision making, and supports scalable enterprise-wide coordination across diverse business functions.

No. of Pages : 18 No. of Claims : 9

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(19) INDIA
(22) Date of filing of Application :14/12/2025

(21) Application No.202541126554 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BLOCKCHAIN-BASED SECURE AI MODEL FOR DIGITAL IDENTITY VERIFICATION

(51) International classification	:H04L 9/32, H04L 9/06, G06F 21/62, G06F 21/32, H04L 9/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a secure system and method for digital identity verification that integrates AI-driven authentication with blockchain technology. The AI module verifies digital identities using biometric data, identity documents, and behavioral patterns in real time. Verification results and metadata are encrypted and stored on a decentralized blockchain ledger to ensure immutability, transparency, and tamper-proof storage. A privacy-preserving access module enables authorized entities to verify identities without exposing sensitive personal information, while an anomaly detection engine identifies potential fraud, duplication, or unauthorized access. Real-time dashboards, alerts, and audit reports provide monitoring and risk management. The system continuously refines AI models based on verification outcomes, delivering a scalable, reliable, and secure solution for identity verification across financial, governmental, e-commerce, and digital platforms.

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126556 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ECO-FRIENDLY CRAYONS

(51) International classification	:C09D11/16, C09D11/17, C09D13/00, C08L91/06, B43K19/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION Title: Eco-Friendly Crayons This invention relates to eco-friendly crayons developed to address significant environmental degradation and health hazards associated with conventional petroleum-based art supplies. The core of the invention is the use of soy wax as a sustainable, non-toxic, and biodegradable base material derived from hydrogenated soybean oil, which is renewable and safe for children and skin contact, emitting no harmful fumes. This choice aligns with green chemistry principles, reducing reliance on fossil fuels and minimizing environmental impact. The system comprises soy wax as the main base material (70-90% by weight), plant-based and food-grade pigments such as turmeric and beetroot powder (5-15% by weight) as natural colorants eliminating the need for synthetic dyes and associated health risks, and optional coconut oil (5-15% by weight) to achieve optimal balance between softness for smooth application and firmness to prevent breakage. The production method is straightforward, involving melting soy wax at low temperatures using a double-boiler setup, integrating the natural colorants and optional ingredients, and pouring the mixture into reusable silicone molds for solidification. The present invention ensures a safe, effective, environmentally responsible, and sustainable alternative for children's art supplies that meets green chemistry principles and user demands for safety and ecological integrity.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126558 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IMPROVED ELECTRIC VEHICLE BATTERY CONFIGURATION, LOW COST ISOLATED CHARGING STATION AND HOME CHARGER

(51) International classification	:H02J7/00, H02J7/02, B60L53/16, H02M1/42
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention discloses an improved electric vehicle (EV) battery configuration and Charging architecture over the Applicant's earlier Patent Application No. 202341019095. The system consists of five battery packs, each composed of nineteen 3.2V 6Ah $LiFePO_4$ cells connected in series. Unlike the earlier system which used electromechanical relays to change the configuration between parallel discharge mode and series charging mode, the present invention introduces a multi-pin circular connector conforming to IEC 61984, IEC 60664-1, and IEC 60529 safety and creepage standards. The connector mechanically reconfigures the battery topology by using separate mating connectors for (a) discharge, (b) pack-wise isolated charging, and (c) full-series high-voltage isolated charging. Each battery pack negative is routed through a diode placed either on the battery side or charger side depending on the mode. The connector replaces all high-voltage relays and eliminates arcing through controlled pin spacing, touch-safe hous

No. of Pages : 33 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025

(21) Application No.202541126574 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART HVAC CONTROL SYSTEM USING DEEP REINFORCEMENT LEARNING

(51) International classification	:F24F 11/64, G05B 15/02, F24F 110/10, F24F 11/58, F24F 11/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Smart HVAC control system using deep reinforcement learning is the proposed invention. The invention provides a smart HVAC control system using deep reinforcement learning (DRL), designed to optimize building climate control for energy efficiency, occupant comfort, and operational reliability. The system integrates IoT-enabled sensors to continuously collect real-time data on indoor temperature, humidity, CO_2 levels, occupancy patterns, and external weather conditions. A DRL engine processes this data to determine optimal HVAC control actions, such as temperature setpoints, airflow distribution, and fan speeds, using reinforcement learning algorithms including Deep Q-Networks (DQN), Deep Deterministic Policy Gradient (DDPG), or Proximal Policy Optimization (PPO). The DRL agent iteratively refines its control policies based on feedback from a reward function that balances energy consumption, comfort, and equipment longevity. The system also provides a user interface for real-time monitoring, trend visualization, and automated alerts when abnormal conditions or inefficiencies are detected. By combining continuous sensing, intelligent control, and adaptive learning, the invention enables energy-efficient, autonomous, and responsive HVAC operation suitable for diverse building types and climates.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126575 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART LOAD FORECASTING SYSTEM FOR SMART POWER DISTRIBUTION

(51) International classification	:G06Q 50/06, G06N 20/00, H02J 3/14, H02J 3/00, G06Q 10/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Smart Load Forecasting System for Smart Power Distribution is the proposed invention. The proposed invention presents an intelligent, data-driven framework designed to enhance the accuracy, reliability, and efficiency of modern power distribution networks. The system integrates advanced machine learning algorithms with real-time sensor data, historical consumption patterns, and contextual variables such as weather conditions, occupancy behavior, and grid constraints to generate short-term and long-term load predictions. By leveraging IoT-enabled metering infrastructure and cloud-edge analytics, the system enables dynamic demand forecasting, proactive load balancing, and optimized energy dispatch. The architecture supports adaptive learning, allowing models to self-improve based on evolving consumption trends and system anomalies. This invention significantly enhances grid stability, reduces operational costs, minimizes peak-load stress, and supports effective integration of renewable energy sources. Overall, the system provides a scalable and intelligent solution for next-generation smart power distribution networks.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126576 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-GUIDED COMPOSITE MATERIAL DESIGN FOR AEROSPACE APPLICATIONS

(51) International classification	:G06N 3/08, G06N 3/04, G06F 17/50, G06F 30/15, G06F 119/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
AI-Guided Composite Material Design for Aerospace Applications is the proposed invention. The proposed invention provides a system and method for AI-guided composite material design tailored for aerospace applications, enabling rapid development of lightweight, high-strength, and reliable materials. The system integrates historical experimental data, multi-scale simulation results, and material property datasets to train machine learning model such as neural networks that can predict mechanical, thermal, and fatigue performance of candidate composite configurations. The AI engine generates multiple design alternatives by varying fiber orientation, layer sequencing, material selection, and laminate thickness, and evaluates each design against performance metrics, weight optimization, manufacturability, and aerospace standards. An iterative optimization loop refines designs based on multi-objective criteria and uncertainty factors, providing engineers with high-performance, validated material configurations. By automating design exploration and performance prediction, the invention significantly reduces development time, lowers prototyping costs, and accelerates the integration of advanced composite materials in aerospace structures, supporting safer, more fuel-efficient, and high-performance aircraft.

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(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126577 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IOT-ENABLED SMART FACTORY THERMAL MANAGEMENT SYSTEM

(51) International classification	:F24F 11/64, G05B 15/02, F24F 11/63, F24F 11/00, F24F 110/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
IoT-Enabled Smart Factory Thermal Management System is the proposed invention. The proposed invention provides an IoT-enabled smart factory thermal management system designed to monitor, predict, and optimize thermal conditions in industrial environments. The system deploys a network of IoT sensors to continuously measure temperature, humidity, airflow, and equipment thermal states across multiple zones within a factory. Collected data is analyzed using machine learning algorithms and predictive models to detect hotspots, forecast overheating events, and determine optimal control actions for HVAC systems, localized cooling devices, and ventilation systems. The system dynamically adjusts thermal control parameters, including temperature setpoints and airflow distribution, to maintain stable and efficient thermal conditions. An iterative feedback mechanism continuously updates predictive models based on real-time and historical data. A user interface provides visualization, trend analysis, and automated alerts for abnormal conditions. By combining continuous sensing, predictive analytics, and adaptive control, the invention enhances energy efficiency, ensures equipment reliability, improves worker safety, and optimizes overall factory productivity.

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126578 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-BASED FAULT DETECTION IN RENEWABLE ENERGY MICROGRIDS

(51) International classification	:H02J3/00, H02J3/38, H02J13/00, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
AI-Based Fault Detection in Renewable Energy Microgrids is the proposed invention. The proposed invention relates to an AI-based fault detection system designed to enhance the reliability and operational safety of renewable energy microgrids. The system utilizes machine learning and deep learning algorithms to analyze real-time voltage, current, frequency, temperature, and power-quality data collected from distributed energy resources, power electronic converters, and storage units. By learning normal microgrid behavior and identifying deviations, the system accurately detects and classifies a wide range of faults, including line faults, inverter malfunctions, battery anomalies, and power-quality disturbances. A real-time decision engine interfaces with microgrid controllers to initiate adaptive protective actions such as isolating faulty segments, reconfiguring power flows, or adjusting inverter parameters. The system continuously updates its models using new operational data, ensuring improved accuracy and adaptability over time. This invention provides a scalable, intelligent, and self-learning diagnostic framework that significantly enhances the resilience, efficiency, and autonomy of renewable energy microgrids.

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025

(21) Application No.202541126582 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Real time EEG Artifact Suppression VLSI ASIC with Adaptive Blind Source Separation — hardware chip that cleans EEG signals on the fly.

(51) International classification	:A61B 5/372, A61B 5/0476, A61B 5/374, A61B 5/00, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Dr. VIJAYACHANDRA KAVURI

(57) Abstract :
ABSTRACT OF THE INVENTION: The invention discloses a Very Large Scale Integration (VLSI) Application-Specific Integrated Circuit (ASIC) for real-time suppression of artifacts in electroencephalogram (EEG) signals using adaptive blind source separation. The ASIC integrates an analog front-end, digital signal preprocessing, and a hardware-implemented adaptive engine based on techniques such as online recursive independent component analysis. Multi-channel EEG inputs are continuously processed: whitened, separated into independent components, artifactual sources (e.g., ocular, muscular) automatically detected and suppressed using feature-based criteria, and clean neural signals reconstructed with minimal latency and power consumption. Designed in CMOS technology, the chip enables low-power (5 mW), portable, real-time EEG cleaning without offline processing or external computation. This facilitates applications in wearable brain-computer interfaces, clinical monitoring, epilepsy detection, and neurofeedback. Advantages over prior art include hardware acceleration for non-stationary signals, dynamic adaptation, and preservation of brain signal integrity, overcoming limitations of software-based methods in power, speed, and portability. The invention significantly enhances EEG signal quality on-the-fly, improving diagnostic accuracy and usability in real-world scenarios.

No. of Pages : 14 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126583 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEEP LEARNING-BASED POWER QUALITY MONITORING SYSTEM

(51) International classification	:G06N 3/08, G06N 3/04, H02J 13/00, G01R 19/25, G01R 21/133
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Ms. CHALAMANI BHAVANA

(57) Abstract :
Deep Learning-Based Power Quality Monitoring System is the proposed invention. The proposed invention relates to a Deep Learning-Based Power Quality Monitoring System designed to provide accurate, real-time detection, classification, and prediction of power quality disturbances in modern electrical networks. The system integrates high-resolution sensing devices with an intelligent preprocessing unit that performs signal conditioning, segmentation, and time–frequency transformation. A deep learning engine employing convolutional neural networks automatically extracts complex features from voltage and current waveforms to identify events such as sags, swells, harmonics, transients, and interruptions, including overlapping or subtle disturbances that traditional methods often miss. An anomaly detection component further predicts emerging faults and abnormal grid behavior using unsupervised or predictive models. The processed results are displayed on a cloud-enabled dashboard that supports visualization, remote monitoring, event logging, and integration with existing grid management systems. By eliminating the need for manual feature engineering and enhancing analytical accuracy, the proposed system improves reliability, operational efficiency, and situational awareness in smart grid and power distribution environments.

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025

(21) Application No.202541126584 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PREDICTIVE BATTERY MANAGEMENT SYSTEM FOR ELECTRIC VEHICLES

(51) International classification	:G01R31/36, G01R31/392, G01R31/367, B60L58/10, G06N20/00, G06F18/213
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Mr. SRAVAN KUMAR PULLA
5)Dr. RAMACHANDRO MAJJI
6)Mr. S RANJITH REDDY

(57) Abstract :
Predictive Battery Management System for Electric Vehicles is the proposed invention. The proposed invention presents a Predictive Battery Management System (PBMS) for Electric Vehicles designed to enhance battery safety, performance, and lifespan through advanced data-driven intelligence. The system integrates high-precision sensors with an onboard analytics engine that continuously monitors voltage, current, temperature, impedance, and charge–discharge behavior across individual battery cells. Using machine learning algorithms, hybrid electrochemical models, and time-series forecasting techniques, the PBMS accurately estimates key battery indicators such as state-of-health (SoH), state-of-power (SoP), and remaining useful life (RUL), while identifying early signs of degradation, cell imbalance, and thermal anomalies. A predictive control module adjusts charging parameters, optimizes load distribution, and regulates thermal conditions to minimize stress and prevent failure. Cloud connectivity enables fleet-level data aggregation, remote diagnostics, and adaptive model updates, further improving predictive accuracy. By combining real-time monitoring with proactive forecasting and intelligent control, the proposed PBMS ensures superior reliability, extended battery lifespan, and enhanced operational efficiency for next-generation electric vehicles.

No. of Pages : 15 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126585 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT SPECTRUM MANAGEMENT USING DEEP REINFORCEMENT LEARNING

(51) International classification	:H04W 16/14, H04L 41/16, G06N 3/092, H04W 28/02, H04B 17/345
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Ms. R ARUL SELVI

(57) Abstract :
Intelligent Spectrum Management Using Deep Reinforcement Learning is the proposed invention. Deep reinforcement learning is proposed to address the challenges of inefficient spectrum utilization in modern wireless communication networks. The proposed approach enables autonomous and dynamic allocation of radio frequency resources by learning optimal spectrum access and control policies through continuous interaction with the wireless environment. Real-time spectrum sensing data, including channel availability, interference levels, and traffic demand, are used as input to a deep reinforcement learning agent that determines actions such as channel selection, bandwidth allocation, and power control. A reward-driven learning mechanism optimizes key performance metrics including spectral efficiency, throughput, latency, and fairness. The system operates without requiring explicit mathematical models of the radio environment, allowing effective adaptation to highly dynamic and uncertain conditions. The proposed intelligent spectrum management framework is well suited for cognitive radio networks, dense IoT deployments, and next-generation wireless systems, offering improved efficiency, scalability, and reliability.

No. of Pages : 15 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126586 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-ENHANCED DYNAMIC STABILITY ANALYSIS OF POWER SYSTEMS

(51) International classification	:H02J3/00, G06F113/04, H02J103/30, H02J103/30, H02J103/35, G06Q50/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Mr. K VENKATESH

(57) Abstract :
AI-Enhanced Dynamic Stability Analysis of Power Systems is the proposed invention. The proposed invention is presented to provide fast and accurate assessment of grid stability under varying operating conditions and disturbances. The proposed approach utilizes real-time measurements from phasor measurement units, intelligent sensors, and control systems, combined with advanced machine learning techniques, to capture complex nonlinear system dynamics. By learning stability patterns from historical and real-time data, the system predicts transient, small-signal, and voltage stability margins and generates early warning indicators of potential instability. The integration of the AI-based analysis with power system operation and control platforms enables proactive decision-making, improves situational awareness, and enhances the reliability and resilience of modern power grids with high penetration of renewable energy sources.

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126587 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED 6G NETWORK TRAFFIC OPTIMIZATION FRAMEWORK

(51) International classification	:H04W 28/08, H04W 24/02, H04L 41/16, G06N 20/00, H04L 41/147
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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6)Mr. MANISH K SRIVASTAVA

(57) Abstract :
AI-Powered 6G Network Traffic Optimization Framework is the proposed invention. The proposed invention is presented to enable intelligent, adaptive, and autonomous management of highly dynamic network traffic. The proposed system leverages real-time data from distributed network elements and employs advanced artificial intelligence techniques to predict traffic demand, detect congestion, and optimize resource allocation across radio access, edge, and core network layers. By dynamically adjusting network parameters such as spectrum usage, bandwidth allocation, network slicing, and routing, the framework improves throughput, reduces latency, and enhances quality of service. The invention provides a scalable and self-learning solution that supports the stringent performance requirements of emerging 6G applications, including ultra-reliable low-latency communications, massive connectivity, and immersive intelligent services.

No. of Pages : 15 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126598 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A FEDERATED LEARNING APPROACH FOR DISTRIBUTED ANOMALY DETECTION IN V2G COMMUNICATION NETWORKS

(51) International classification	:G06N 20/00, B60L 53/66, B60L 53/62, B60L 53/63, H04W 12/122
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Rampelli Manojkumar

(57) Abstract :
This invention presents a federated learning–based distributed anomaly detection framework for secure vehicle-to-grid (V2G) communication in smart grids. The system enables electric vehicles, charging stations, and aggregators to collaboratively learn normal and abnormal operational behaviours without sharing raw data. Local anomaly detection models are trained at charging station controllers using power flow, voltage, and communication parameters. Model updates are securely transmitted to a federated learning server hosted at the utility level. The server performs global model aggregation to generate a system-wide anomaly detection model. The aggregated model is redistributed to all participating nodes for real-time deployment. The framework detects cyber-attacks, communication failures, and abnormal charging or discharging behaviour. Privacy preservation and reduced communication overhead are ensured through federated learning. The proposed approach is scalable to large EV populations. Overall, the invention enhances grid reliability, cybersecurity, and operational resilience in V2G-enabled smart grids.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126601 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MACHINE LEARNING HEALTHCARE RECOMMENDATION SYSTEM

(51) International classification	:G16H 50/20, G16H 10/60, G16H 50/70, G06N 20/00, G16H 20/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT MACHINE LEARNING HEALTHCARE RECOMMENDATION SYSTEM The present disclosure provides a machine learning healthcare recommendation system including a web-based user interface configured to receive symptom input from users, at least one machine learning classifier trained on symptom-disease mappings to predict diseases, a medical database including disease data, medication information, precautionary measures, dietary recommendations, and workout suggestions, a recommendation engine configured to generate comprehensive medical guidance based on predicted diseases, means for converting symptom input into binary feature vectors for processing, and wherein the system achieves prediction accuracy of at least 95% for symptom-based disease classification. The system includes a backend server with a prediction system that processes symptom data through manually implemented algorithms and retrieves healthcare information from structured medical databases for display through the web browser interface. (Fig. 1) [To be published along with figure 1]

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126602 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REAL-TIME SPEECH EMOTION RECOGNITION SYSTEM WITH SPEAKER DIARIZATION

(51) International classification	:G10L 25/63, G10L 15/26, G10L 15/22, G10L 15/06, G10L 15/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Mr. Keerthivasan S

(57) Abstract :
ABSTRACT REAL-TIME SPEECH EMOTION RECOGNITION WITH SPEAKER DIARIZATION The present disclosure provides a real-time speech emotion recognition system comprising an audio input module configured to receive multi-speaker audio data, a speech-to-text transcription module configured to generate text transcripts from the audio data, a speaker diarization module configured to segment the audio data into speaker-specific temporal intervals, an emotion classification module configured to analyze the text transcripts and assign emotion labels to speech segments, and a processing pipeline configured to correlate speaker identifications with the emotion labels to generate speaker-specific emotional analysis. The system integrates OpenAI's Whisper model for speech-to-text transcription, PyAnnote pipeline for speaker diarization, and transformer-based models including RoBERTa and DistilBERT for emotion classification. The processing pipeline executes transcription, diarization, and emotion classification in parallel to achieve processing latency of approximately 1.5 seconds while maintaining emotion recognition accuracy of 94% and diarization error rate below 7.2%. (FIG. 1)

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126603 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REAL-TIME YOGA POSTURE DETECTION AND CORRECTION SYSTEM

(51) International classification	:G06T 7/73, A63B 24/00, G06K 9/00, G06V 40/20, G06T 7/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)SANCHI GUPTA
3)CHARUL SUWALKA

(57) Abstract :
ABSTRACT REAL-TIME YOGA POSTURE DETECTION AND CORRECTION SYSTEM The present disclosure provides a real-time yoga posture detection and correction system. The system includes a video capture module configured to capture live video frames of a user performing yoga poses, a pose estimation module utilizing a pose detection framework to detect and extract anatomical landmarks from the captured video frames, an angle calculation module configured to compute joint angles between detected anatomical landmarks, a pose evaluation module configured to compare the computed joint angles against predefined reference angles for specific yoga poses, a feedback generation module configured to generate corrective feedback based on deviations between the computed joint angles and the predefined reference angles, and a user interface module configured to display the feedback to guide the user in pose correction. The system employs dual processing paths utilizing OpenCV for detecting body keypoints and generating corrective guidance. (FIG. 1)

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126604 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYBRID MACHINE LEARNING SYSTEM FOR URBAN AIR QUALITY PREDICTION

(51) International classification	:G06N 3/08, G06Q 50/26, G06N 3/04, G06Q 10/06, G06N 3/006
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Mr. Rishit Routhu
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(57) Abstract :
ABSTRACT HYBRID MACHINE LEARNING SYSTEM FOR URBAN AIR QUALITY PREDICTION The present disclosure provides a hybrid machine learning system for urban air quality prediction. The system includes a data preprocessing module configured to receive air quality data including pollutant concentrations and generate preprocessed data through cleaning, Air Quality Index calculation, encoding, and normalization. A hybrid modeling module includes models integrating Convolutional Neural Networks with Random Forest Regression and Support Vector Regression, and Long Short-Term Memory networks with Random Forest Regression and Support Vector Regression. A nature-inspired optimization module includes Genetic Algorithm and Particle Swarm Optimization optimizers configured to optimize Extreme Gradient Boosting model hyperparameters. An evaluation module assesses model performance using Mean Squared Error, Root Mean Square Error, Mean Bias Error, and coefficient of determination metrics. (FIG. 1)

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126605 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SECURE MESSAGING PLATFORM WITH MACHINE LEARNING BASED INTRUSION DETECTION

(51) International classification	:G06N 20/00, H04L 9/40, H04L 29/06, G06F 21/55, G06N 3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SECURE MESSAGING PLATFORM WITH MACHINE LEARNING BASED INTRUSION DETECTION The present disclosure provides a secure messaging platform comprising a messaging module configured to encrypt messages for secure communication between users, a machine learning-based intrusion detection system configured to analyze network traffic patterns in real-time to detect anomalous activities indicative of network intrusions, and integration between the messaging module and the intrusion detection system to provide unified security. The messaging module implements end-to-end encryption using Advanced Encryption Standard and RSA cryptographic algorithms to protect message content during transmission. The machine learning-based intrusion detection system employs supervised learning algorithms trained on labeled network traffic data to classify communication patterns as benign or malicious with detection accuracy exceeding 95%. The platform incorporates a threat prevention module that automatically responds to detected intrusions by implementing countermeasures including connection termination and user alerts, and a user interface module that displays encryption status and security alerts to users. (FIG. 1)

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025

(21) Application No.202541126606 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED MOCK INTERVIEW PLATFORM WITH PERSONALIZED LEARNING PATHS

(51) International classification	:G06Q 10/10, G06N 20/00, G06Q 10/06, G09B 7/02, G09B 7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT AI-POWERED MOCK INTERVIEW PLATFORM WITH PERSONALIZED LEARNING PATHS The present disclosure provides a computer-implemented method (100) for conducting AI-powered mock interviews. The method (100) includes configuring interview parameters (104) based on user requirements including job position and experience level, generating interview questions (106) using artificial intelligence models based on the configured parameters, presenting the generated questions (108) to a user through a user interface, capturing user responses (110) to the presented questions, determining whether additional questions remain (112) in an interview sequence, repeating the presenting step (108) and capturing step (110) for each remaining question when additional questions are determined to remain, evaluating the captured responses (114) using artificial intelligence analysis to assess technical accuracy and communication effectiveness, generating personalized feedback (116) based on evaluation results, and storing session data (118) including the questions, responses, and feedback. (FIG. 1)

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126607 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ANALYTICS DASHBOARD SYSTEM FOR UNIVERSITY DATABASE MANAGEMENT

(51) International classification	:G06Q 50/20, G06Q 10/06, G06Q 10/10, G06F 16/248, G06F 16/904
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT ANALYTICS DASHBOARD SYSTEM FOR UNIVERSITY DATABASE MANAGEMENT The present disclosure provides a computer-implemented method for managing university database analytics. The method automatically extracts student academic records from Excel files using Node.js scripts and stores the extracted records in a MySQL database (1). The method generates role-based web interfaces for students, parents, and administrators providing access to academic data. The method generates interactive data visualizations using JavaScript libraries and displays academic performance metrics through bar charts, line graphs, and pie charts. The method shows attendance trends and club participation statistics through the interactive visualizations. The method implements session management protocols using PHP scripts, provides user authentication mechanisms, and includes timeout mechanisms and secure logout procedures. The method processes academic data to calculate CGPA values, attendance percentages, and pass/fail ratios for display in the role-based interfaces. (Fig. 1) [To be published along with figure 1]

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126608 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM FOR URBAN FLOOD DETECTION USING SATELLITE DATA AND MACHINE LEARNING

(51) International classification	:G06N 20/00, G06V 20/13, G06V 10/764, G06K 9/62, G06V 10/774
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Mr. RAJARSHI CHAKRABORTY
4)Mr. ARITRA GHOSH
5)Mr. DIVYA PRAKASH SINGH

(57) Abstract :
ABSTRACT SYSTEM FOR URBAN FLOOD DETECTION USING SATELLITE DATA AND MACHINE LEARNING The present disclosure provides a system for urban flood detection using satellite data and machine learning. The system includes a data acquisition module configured to collect satellite imagery from multiple sources, a preprocessing module configured to process the collected data, a feature extraction module configured to generate features from the processed imagery, a machine learning classification module having a Random Forest classifier trained to distinguish between water-covered and non-water areas based on the features, and an output module configured to generate flood maps displaying detected flood-affected areas. The satellite sources include Synthetic Aperture Radar and optical imagery. The preprocessing module applies different threshold values based on seasonal conditions. The system includes a temporal analysis component configured to distinguish between permanent water bodies and temporary flood zones, and a validation component configured to assess classification accuracy. (FIG. 1)

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126609 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : QUANTUM MACHINE LEARNING SYSTEM FOR CHRONIC KIDNEY DISEASE DETECTION

(51) International classification	:G16H 50/20, G06N 10/00, G16H 10/60, G16H 50/70, G06N 10/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Shreya Girish Savadatti

(57) Abstract :
ABSTRACT QUANTUM MACHINE LEARNING SYSTEM FOR CHRONIC KIDNEY DISEASE DETECTION The present disclosure provides a quantum machine learning system for chronic kidney disease detection. The system includes a data input module configured to receive clinical data including biochemical markers, a quantum feature mapping module configured to encode clinical features into quantum states using quantum feature maps, a quantum kernel computation module configured to compute quantum kernel matrices by calculating pairwise similarity measurements between quantum state vectors, and a classifier configured to perform chronic kidney disease classification using the quantum kernel matrices. The quantum feature mapping module includes a custom optimized quantum feature map with parameterized quantum circuits having controlled rotation gates and multiple repetition layers. The system further includes a data preprocessing module configured to normalize clinical data and handle missing values, a feature selection module using regularization, and a sparse autoencoder module for minority class augmentation. (Fig. 1)

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126610 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR COASTAL FLOOD RISK PREDICTION USING MACHINE LEARNING

(51) International classification	:G06N 20/00, G06Q 50/26, G06Q 10/06, G01W 1/10, G06Q 10/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Himank Gupta
3)Navya Jain
4)Shreya Prasad

(57) Abstract :
ABSTRACT COASTAL FLOOD RISK PREDICTION SYSTEM USING MACHINE LEARNING The present disclosure provides a system for coastal flood risk prediction that includes a data input module configured to receive environmental parameters including rainfall intensity, atmospheric pressure, wind speed, tidal level, and cyclone presence indicators for a coastal region. The system includes a machine learning prediction engine having a trained classifier configured to analyze the environmental parameters and generate flood risk classifications selected from low risk, moderate risk, and severe risk categories. The system further includes a user interface module configured to display the flood risk classifications. The data input module receives environmental data through input fields, and the machine learning prediction engine processes the data through a preprocessing module that validates and normalizes the parameters. The trained classifier processes the preprocessed environmental parameters through ensemble learning algorithms to generate predictions decoded into flood risk categories and presented through the user interface module. (FIG. 1) [To be published along with figure 1]

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126613 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GRAPH-ATTENTION-NETWORK-BASED COMPUTATIONAL FRAMEWORK FOR PREDICTING HIGH-EFFICACY DRUG CANDIDATES USING PHARMACOPHORE FINGERPRINTS AND SIMILARITY-DRIVEN LABEL GENERATION

(51) International classification	:G16C 20/50, G16C 20/70, G16C 20/30, G16C 20/20, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)Dr. Revelle Akshara

(57) Abstract :
[055] The invention provides a computational framework for predicting the therapeutic efficacy of novel chemical entities by integrating pharmacophore fingerprint generation, similarity-based quartile labelling, molecular graph construction and graph-attention-network-driven classification. A reference molecule exhibiting known biological activity is used as the basis for computing Jaccard similarity values across large molecular datasets, which are then statistically transformed into four categorical efficacy labels. Each molecule is converted into a graph representation preserving atomic and bonding characteristics, enabling the Graph Attention Network to learn structural features relevant to biological activity through attention-based aggregation. The framework demonstrates high predictive capability, achieving an accuracy of approximately eighty-eight percent on large-scale datasets. The invention significantly accelerates early-stage drug discovery by providing an automated, scalable and data-driven system for screening vast chemical libraries and identifying high-potential drug candidates for further experimental evaluation. Accompanied Drawing [FIGS. 1-13]

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126614 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HIGH-SPEED FPGA-ACCELERATED SYSTEM AND METHOD FOR REAL-TIME ADAPTIVE VIDEO PROCESSING

(51) International classification	:G06T 1/20, H04N 7/26, H04N 7/01, H04N 5/14, H04N 21/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Dr. Ch. Raja
9)Dr. Sudeep Saraswat
10)Dr. Pradeep Pokhriyal

(57) Abstract :
[045] The present invention provides a high-speed, FPGA-accelerated system and method for real-time adaptive video processing capable of dynamically reconfiguring hardware modules during active video streaming. The system comprises a video input interface, an FPGA fabric with static and dynamic partial reconfiguration regions, an Adaptive Processing Selector utilizing machine-learning techniques, a high-speed memory management architecture, and a parallel video-processing pipeline. The method involves analyzing frame metadata, selecting optimal processing modules, dynamically reconfiguring FPGA regions without interrupting frame flow, and outputting processed video with deterministic low latency. The invention enables scalable, energy-efficient, and intelligent video processing suitable for high-resolution, high-frame-rate applications such as surveillance, autonomous vehicles, industrial automation, and advanced imaging analytics. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/12/2025
(21) Application No.202541126617 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BIOGAS PLANT MADE OF FEW LOW LEVEL MINOR PIPES INTERCONNECTED TO HEADER PIPES AND VERTICAL PIPES

(51) International classification	:C02F11/04, C12M1/107, F16L41/00, C10L3/10, A01C3/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Vooradi Rajeshwara Prasad

(57) Abstract :
The device' named as "Biogas plant made of few low level minor pipes interconnected to header pipes and vertical pipes" relates to biogas plants constructed by interconnecting "one or more minor pipes (10), header pipes (20) and a central vertical pipe (30) if any". All pipes are closed at lower ends. Minor pipes (10) are "flexible, or rigid pipes". Header pipes (20) and vertical pipes (30) are rigid pressure pipes. Non vertical header pipes (20) are supported on columns (100). Inlet valves (350) are attached near lower ends of minor pipes (10), and connected trough pipe (380) to raw sludge loading means. Digested sludge outlet valves (360) are attached near lower ends of minor pipes (10) and vertical pipes (20), and connected through pipe (390) to digested sludge storage tank (420). Biogas outlet valve (370) connected at top of elevated pipe and connected through pipe (400) to gas collector (430).

No. of Pages : 173 No. of Claims : 27

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/12/2025
(21) Application No.202541128961 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A System and Method for Bilateral Interview Governance

(51) International classification	:G06Q 10/06, G06Q 10/10, G06Q 10/00, G06F 17/30, G09B 7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
A computer-implemented system and method are disclosed for governing interviews conducted between distinct participant roles using synchronized multimodal data and executable governance rules. Independent multimodal data streams captured from separate endpoint devices associated with a candidate role and an interviewer role are synchronized to generate a time-aligned interaction record. Interaction characteristics of both roles are evaluated in real time against a compiled governance plan, and governance conditions are enforced during the interview through actions including interruption control, pacing control, clarification prompts, and delayed question delivery. Interview questions are dynamically generated using weighted competency clusters derived from organizational grievance data and role-specific requirements, with enforced semantic uniqueness to prevent repetition. System-based evaluation is performed in parallel with interviewer assessment, and scoring divergence is used to evaluate interviewer integrity without modifying candidate performance outcomes. A cryptographically secured interview record is aggregated across interviews to determine organizational fairness eligibility, enabling issuance of fairness recognition indicators for employers based on governed interview compliance.

No. of Pages : 83 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/12/2025
(21) Application No.202541128993 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SUSTAINABLE SELF-POWERED FeOOH BREATH SENSORS WITH INTEGRATED HYDROVOLTAIC POWER GENERATION

(51) International classification	:G01N 33/497, A61B 5/097, A61B 5/00, A61B 5/083, G01N 33/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)BATABYAL, Sudip K

(57) Abstract :
A sustainable self-powered α-FeOOH breath sensors with integrated hydrovoltaic power generation for non-invasive and real-time breath monitoring in personalized health management and disease diagnostics. The self-powered human breath sensor utilizes α-FeOOH as both the sensing material and the active component for hydrovoltaic power generation. A single α-FeOOH hydrovoltaic unit achieved an open-circuit voltage of 0.84 V and a short-circuit current of 0.45 μA, showcasing its potential for autonomous operation. Real-time response and recovery characteristics to a single breath cycle were evaluated, exhibiting a response time of 0.24 s and a recovery time of 3.13 s. The technology highlights the promise of α-FeOOH-based breath sensors for non-invasive and real-time respiratory monitoring, offering avenues for personalized health management and disease diagnostics.

No. of Pages : 42 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/12/2025

(21) Application No.202541131822 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An Integrated Multi-Axis Gimbal System with Advanced Vibration Mitigation for UAV Evaluation

(51) International classification	:B64C 39/02, F16F 15/03, F16F 15/02, G05D 1/08, G05D 1/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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2)Dr. Purushotham G.
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4)Mr. Saviraj A S

(57) Abstract :
ABSTRACT An Integrated Multi-Axis Gimbal System with Advanced Vibration Mitigation for UAV Evaluation The present invention provides an advanced gimbal-based vibration mitigation system designed for high-precision testing and stabilization of unmanned aerial vehicles (UAVs). The system integrates a multi-axis gimbal assembly comprising lightweight motion rings, air-supported rotational interfaces, and an axle plate that supports the UAV under evaluation. A closed-loop stepper motor with encoder ensures accurate rotational control across yaw, pitch, and roll axes. The system further incorporates a comprehensive vibration mitigation architecture including a Vibrational Excitation Engine for generating controlled disturbances, a Frequency Diagnostics Processor for identifying harmful resonances, and a Modal Response Characterization Framework for determining natural frequencies and structural dynamic behavior. Passive Vibration Attenuation Components reduce broadband mechanical transmission, while an adaptive real-time counter-vibration actuation unit actively cancels residual vibrations using micro-actuators driven by sensor feedback. Collectively, the system enables precise vibration analysis, control optimization, and structural refinement, ensuring improved UAV stability, performance, and operational safety during flight.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025

(21) Application No.202541133944 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A System and Process for AI-Based Decoding and Knowledge Management of Classical Indian Scripts.

(51) International classification	:G06F 111/14, G16H 70/60, G16Y 20/10, A61M 60/40, A61M 60/50
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to an AI-based system and process for decoding and managing classical Indian scripts such as Brahmi, Grantha, Tamil-Brahmi, Devanagari, and other regional variations. The system employs deep learning and computer vision models to process images of inscriptions or manuscripts, identify script families, decode glyphs, reconstruct phonetic and linguistic meaning, and translate them into modern Indian or global languages. In addition to technical decoding, the invention integrates a Heritage Knowledge Management Framework (HKMF) that systematically organizes and analyzes the decoded linguistic data. This framework enables museums, universities, and government institutions to manage heritage information through analytics, dashboards, and decision-support tools. The method reduces manual effort in epigraphic studies, enhances interdisciplinary collaboration, and supports data-driven cultural preservation, resource planning, and digital heritage governance, ensuring long-term accessibility and management of India's linguistic assets.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2025
(21) Application No.202541134605 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND PROCESS FOR PRODUCTION OF GRAPHENE AND GRAPHENE-FAMILY NANOMATERIALS

(51) International classification	:B65D 5/4805, B65D 5/465, H10F 39/10, H04W 12/108, B62J 9/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Hooman Hyat Ali
4)Arshman Hayat Ali

(57) Abstract :
The invention provides an integrated wet-chemical system and process for production of graphene and graphene-family nanomaterials from diverse graphitic feedstocks, including natural, synthetic and waste graphite. The system comprises, in operative association, a feed preparation unit, hydrochloric-acid pretreatment reactor, jacketed oxidation reactor with controlled dosing and agitation, solid–liquid separation with counter-current washing, optional reduction unit, drying/dispersion unit, off-gas scrubbing system and effluent-treatment plant configured for wash-liquor recycle. A central control interface, optionally PLC/ML-assisted, enables formula-based selection of product grade few-layer graphene, graphene oxide or reduced graphene oxide by coordinated adjustment of temperature, reagent dosing, mixing intensity and residence time. The arrangement is modular and scalable from kilogram to tonne scale, reduces consumption of corrosive reagents and water versus conventional routes, and valorises scrapped graphite into high-value nanomaterials under environmentally compliant operation.

No. of Pages : 46 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2025
(21) Application No.202546084709 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : THREE-DIMENSIONAL VISUAL MAPPING SYSTEM FOR INSTORE VIRTUAL AGENT NAVIGATION

(51) International classification	:G01C0021360000, G01C0021200000, H04W0004330000, G06Q0030025100, G05D0001000000
(31) Priority Document No	:62257722
(32) Priority Date	:20/11/2015
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filed on	:201644039413 :01/01/1900
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT THREE-DIMENSIONAL VISUAL MAPPING SYSTEM FOR INSTORE VIRTUAL AGENT NAVIGATION The present invention is an improvement of the invention claimed in Indian Patent Application numbered 201644039413 dated 18th November 2016 with priority date 20th November 2015, titled “Systems and Methods for Virtual Agents to Help Customers and Businesses”. This patent of addition provides a visual mapping enhancement for the virtual agent system of Indian Patent 312437. An autonomous imaging device captures shelf images inside a retail store; each frame is tagged with three-dimensional coordinates obtained from an indoor positioning engine. A map generation module clusters the coordinate tagged frames into item nodes, creating a persistent 3-D store map. A navigation module, integrated with the virtual agent, receives a user’s natural language request for an item, looks up the item node, computes the shortest route from the user’s current coordinates, and delivers turn-by-turn guidance, thus enabling accurate instore routing without human intervention. Ref. Fig. 1

No. of Pages : 19 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202547069336 A
(19) INDIA
(22) Date of filing of Application :21/07/2025
(43) Publication Date : 06/02/2026

(54) Title of the invention : FUSION SPLICER HAVING CABLE GUIDE

(51) International classification	:G02B 6/255
(31) Priority Document No	:10-2023-0000517
(32) Priority Date	:03/01/2023
(33) Name of priority country	:Republic of Korea
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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2)JUN, Sang-Chul

(57) Abstract :
The present invention relates to a fusion splicer having a cable guide, and more specifically to a fusion splicer having a cable guide that allows fusion to be stable, the cable guide being detachably and horizontally installed on a side of a fusion splicer to allow the cutting surface of an optical fiber to be positioned and fixed horizontally so that a cable, one end of which is placed on an optical fiber fixing part, does not sag or bend in the lengthwise direction to cause the cutting surface of the optical fiber to be lifted up from the optical fiber fixing part and give rise to problems such as suspension of the fusion process.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/01/2026
(21) Application No.202641000645 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR PREDICTIVE AND ADAPTIVE CONTROL OF A HUMANOID PLATFORM

(51) International classification	:G05B 13/04, G05B 13/02, G06F 3/01, G05D 1/02, G05D 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A SYSTEM AND METHOD FOR PREDICTIVE AND ADAPTIVE CONTROL OF A HUMANOID PLATFORM The present invention provides a Predictive Adaptive Humanoid Control System designed to enable highly stable, responsive, and intelligent locomotion and interaction in humanoid platforms. The system integrates multi-modal sensor data, including proximity, joint-position, pressure, visual, auditory, and gesture inputs, to generate a synchronized real-time state estimate of the humanoid. A model-predictive control module computes future locomotion trajectories, while a heuristic path-optimization engine determines efficient navigation paths, even in dynamic or obstacle-filled environments. The system further employs adaptive state-updating logic to maintain balance, minimize path deviation, and ensure smooth joint actuation. Experimental results demonstrate 0% overshoot, 1.8-second settling time, improved path accuracy, and fast perceptual responses including gesture, speech, and face recognition. Overall, the invention delivers a computationally efficient, real-time control framework that significantly enhances the stability, adaptability, and autonomy of humanoid robotic platforms. FIG.3

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/01/2026
(21) Application No.202641001760 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MIXING DEVICE FOR A NON-CIRCULAR SUBSTRATE OF EXHAUST AFTER TREATMENT SYSTEM OF AN ENGINE

(51) International classification	:F01N 3/28, F01N 3/20, B01F 5/06, B01F 23/10, F01N 3/035
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)DNYANESH PRAMOD DANDEKAR
4)RAVI KRISHNA CH

(57) Abstract :
The present invention relates to a mixing device (100) for an engine exhaust after treatment system (200). The device comprises an mixing chamber (102) with first and second ends (102A, 102B), a stiffener plate (102-1), a slip protection plate (102-2), an inlet convex baffle (104), a perforated half-baffle plate (106), and a mixing tube (108) having at least three deflector flaps (108A–108C). The inlet convex baffle (104) is arranged at the first end, while the perforated half-baffle plate (106) is disposed at the second end. The slip protection plate (102-2) secures the chamber within a mixing shell (204) and directs exhaust gas toward an SCR unit (204-1). The stiffener plate (102-1) provides structural support and accommodates a urea injection inlet (204-2), enabling efficient exhaust–urea mixing with reduced pressure loss, minimized wall impingement, enhanced urea breakup, and a uniformity index UI≥0.95. Reference will be Fig 2.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/01/2026

(21) Application No.202641002895 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOLAR-POWERED BILLBOARD AIR PURIFICATION TOWER

(51) International classification	:G09F 23/00, A61L 9/20, B01D 46/00, A61L 9/22, A61L 9/015	(71)**Name of Applicant :** **1)P. Sai Krishna** Address of Applicant :D-3 Adarsh Apartments No.8, Sarangapani Street T. Nagar, Chennai -600017 Tamilnadu India Chennai Tamil Nadu India **2)Y. Nishita Prasad** (72)**Name of Inventor :** **1)P. Sai Krishna** **2)Y. Nishita Prasad**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present disclosure relates to a solar-powered billboard air purification and disinfection tower comprising a vertically oriented structural framework housing an integrated air filtration and disinfection system, a renewable energy generating system, and a digital advertising assembly. The tower includes a multi-stage air filtration and disinfection system disposed within the framework, an air release system with outlet vents positioned in opposite direction for discharging purified air, a solar power generation system including solar panels to generate power , and an energy storage system comprising a battery bank located in a base compartment of the tower. At least one digital advertising display is mounted on the structural framework and is operatively coupled to a control system. The multi-stage air filtration system includes an air intake section with a perforated grill arranged in a lower portion of the framework, a filtration chamber having a pre-filter, an electrostatic precipitator, a multi-stage filter bank, and a final treatment chamber for air disinfection with virus level filtration system. The control system is configured to coordinate operation of the air treatment system, the solar power system, and the digital advertising display.

No. of Pages : 27 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/01/2026
(21) Application No.202641003326 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR CONSTRAINT-CONTROLLED PROBABILISTIC AI INFERENCE IN REGULATED-DOMAIN DECISIONING

(51) International classification	:G06N 5/04, G06N 20/00, G06N 5/02, G06N 7/00, G06F 17/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A computer-implemented system 100 is disclosed for controlling probabilistic artificial-intelligence inference in regulated-domain decisioning. The system 100 enforces hard regulatory constraints using a deterministic rule-enforcement module 136 to derive a constraint-defined decision space prior to any probabilistic inference. Execution of a probabilistic inference module 140 is conditionally gated such that outputs violating the constraints are prevented. Regulatory text segments relevant to the constraint-defined decision space are retrieved prior to generation, each segment being version-identified. An output decision is generated solely from the retrieved regulatory text segments and is blocked when no constraint-compliant segment is available. The system 100 further attaches an auditable evidence bundle to the output decision, including regulatory clause references and corresponding version identifiers, thereby enabling traceable, reproducible, and compliant AI-assisted decisioning in regulated environments.

No. of Pages : 74 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/01/2026
(21) Application No.202641005411 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A MODULAR ROOT-GUIDANCE INSERT FOR CONTROLLED ROOT ARCHITECTURE IN PLANT CULTIVATION SYSTEMS

(51) International classification	:A01G 27/00, A01G 31/02, A01G 27/02, A01G 27/04, A01G 9/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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12)Soyaboina Mounika
13)Vadlapally Jahnavi
14)Gande sahithi
15)Kudumu Akshith
16)kudurla Honey kumari
17)K Aishwarya
18)Sayam Sai Sri
19)Ubed Ali
20)M Sathyanarayana

(57) Abstract :
7. ABSTRACT A modular root-guidance insert (100) for controlled root architecture in plant cultivation systems is disclosed. The insert (100) comprises a base plate (110) having perforations (112) and integrated grooves (114), a capillary wick network (130) disposed within the grooves (114) for moisture transport by capillary action, at least one cartridge bay (116) configured to receive a nutrient cartridge (120), and a diffusion-control membrane (140) positioned between the cartridge (120) and a plant growth medium (150). The capillary wick network (130) and the nutrient cartridge (120) are spatially offset such that moisture delivery pathways and nutrient release zones are non-coincident, thereby generating controlled and sustained moisture and nutrient gradients within the growth medium (150). The gradients guide plant root growth (170) along predefined subsurface paths. The insert (100) operates passively without external power, pumps, sensors, or electronic control and is suitable for installation in nursery pots, grow bags, and vertical farming containers (160). The figure associated with abstract is Fig. 1

No. of Pages : 25 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/01/2026
(21) Application No.202641006074 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Imidazo[1,2-a]quinolinium compounds and preparation thereof

(51) International classification	:A61P 35/00, C07D 471/04, C07D 471/14, C07D 233/58, A61K 31/4745, C07B 37/10, B01J 31/22, C07B 37/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Nitish Ranjan Mahapatra
3)Poovitha Sundar
4)Subarna Kar

(57) Abstract :
The present invention relates to the field of medicinal chemistry. Particularly, it relates to a novel class of cationic polycyclic heteroaromatic compounds (cPHACs) featuring the imidazo[1,2-a]quinolinium scaffold. It also relates to a process for preparing these compounds. These compounds are useful as an anticancer compound.

No. of Pages : 53 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006641 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE REAL-TIME POINT-OF-CARE MOLECULAR DEVICE AND APPLICATION THEREOF

(51) International classification	:C12Q 1/68, C12Q 1/6844, B01L 7/00, C12M 1/34, C12M 1/38
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Portable Real-time Point-of-Care Molecular Device and Application thereof The present invention relates to a portable real-time point-of-care molecular diagnostic device for performing in-vitro nucleic acid amplification and detection using isothermal amplification chemistry, including loop-mediated isothermal amplification (LAMP) and reverse transcription- LAMP (RT-LAMP). The device integrates a microcontroller (10), temperature sensor (20), color sensor (22), control driver (30), and Peltier element (32), powered via a battery management system (44) and rechargeable power source (50), to provide rapid, sensitive, and automated detection of infectious disease biomarkers. The system ensures precise temperature control, real- time signal acquisition, automated result interpretation, and safe sample handling within a compact, hand-held, and portable format. The device delivers diagnostic results in under 30 minutes, eliminating the need for complex laboratory infrastructure or skilled personnel. The invention is particularly suited for resource-limited healthcare settings, mobile diagnostic units, public places, and emergency outbreak monitoring, providing cost-effective, reliable, and rapid point-of-care molecular diagnostics.

No. of Pages : 30 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006646 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Lipid Carriers for Intranasal Administration to Target Brain in the Treatment of Neuro AIDS

(51) International classification	:A61K 9/127, A61K 47/24, A61K 47/28, A61P 31/18, A61K 9/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Vanaja Kenchappa
2)Balaji K

(57) Abstract :
The invention relates to proliposomal formulations for effective treatment of Neuro AIDS. It specifically relates to site-specific drug delivery formulations for administration of Atazanavir in the form of proliposome and process for preparation of such proliposomes. The formulation was prepared by solvent evaporation method using Soy phosphatidyl ethanolamine, Cholesterol in ratio of 1:1 to 1:10 and evaluated for Particle size, Zeta potential, Entrapment efficiency, in vitro drug release, in vivo bioavailability studies. Hence, the data obtained from the present investigation revealed that ATZ loaded proliposomes (ATZ-PL) for intranasal administration could be a promising approach for the delivery of Protease Inhibitor in the management of Neuro AIDS in particular helping to control the viral load in the most important anatomical brain reservoir. The stability studies indicated that the proliposomes prepared are stable.

No. of Pages : 30 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006648 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Deep Learning–Based Diagnostic and Therapeutic Decision Support System for Multi-Class Kidney Stone Identification and Severity Assessment

(51) International classification	:G16H 50/20, G06N 20/00, G06T 7/00, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)Dr. N Senthamarai

(57) Abstract :
The invention discloses a deep learning–based diagnostic and decision support system for kidney stone management. The system classifies stones into four subtypes—calcium, struvite, uric acid, and cystine—using medical imaging and clinical data. It predicts stone severity through automated feature extraction and machine learning techniques. Based on subtype and severity, the system recommends appropriate treatment options. The invention provides an integrated, accurate, and efficient framework for improving clinical decision-making in kidney stone diagnosis and therapy.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006666 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : CLOUD-INTEGRATED MACHINE LEARNING FRAMEWORK FOR ENVIRONMENTAL POLLUTION FORECASTING AND MANAGEMENT IN SMART CITIES

(51) International classification	:G06N 20/00, G06Q 50/26, G01N 33/18, G06Q 10/04, G06N 3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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11)M. SATHYA SUNDARAM

(57) Abstract :
The present invention relates to the development of a cloud-integrated machine learning framework for real-time environmental pollution forecasting and intelligent management in smart cities provides a system that integrates distributed sensing devices, cloud-based data aggregation, and advanced machine learning models for monitoring, prediction, and management of multiple pollution parameters like air, water, and noise. The real-time collection of environmental data is drawn from heterogeneous sensor networks across the urban areas, which is to be securely transmitted to a cloud infrastructure for pre-processing, feature extraction, and predictive analytics. Machine learning algorithms analyse spatiotemporal pollution patterns for pollution level forecasting and extracting actionable insights for city administrators. An automated decision-support module operating within the framework recommends adaptive mitigation strategies based on forecasted pollution severity. Accomplishing scalable, accurate, and proactive pollution control supports sustainable urban development, ensures enhanced public health protection, and improves environmental governance within the smart city ecosystem. FIG.1

No. of Pages : 11 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006673 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Enhanced Pneumonia Diagnosis using Mask R-CNN and ResNet50-Based Deep Learning on Chest X-rays

(51) International classification	:G06V 10/764, G06T 7/00, G06N 3/08, G06N 3/04, G06V 10/774
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Usha Rani Macigi
2)G. Girija Rani

(57) Abstract :
This study proposes a robust and efficient two-stage deep learning framework aimed at the accurate classification of Chest X-ray images into NORMAL and PNEUMONIA categories. The methodology integrates Mask R-CNN for precise segmentation of lung regions, followed by a fine-tuned RestNet50 model for binary classification. By effectively isolating lung areas, Mask R-CNN enhances the relevance of extracted features, thereby improving diagnostic performance. On the original imbalanced dataset, the framework achieved a classification accuracy of 90.71%. Upon the incorporation of data augmentation techniques to address class imbalance, the performance significantly improved, reaching an accuracy of 95.26%. These results underscore the critical role of data balancing in enhanced model generalization and reliability. This research highlights the synergistic benefit of combining instance segmentation with deep classification networks for superior pneumonia detection in chest radiographs. The integration of segmentation enables the model to focus on diagnostically relevant regions, thus boosting the efficacy of feature ex traction an d classification. Future research will investigate the inclusion of clinical metadata (e.g.: age, symptoms, comorbidities) to further personalize and refine diagnostics accuracy. This advancement holds potential for facilitating the deployment of AI-assisted diagnostic tools in the real-world clinical settings, ultimately contributing to timely and reliable medical decision making.

No. of Pages : 13 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006683 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MODIFIED RECLINING CHAIR CONTAINING ADJUSTABILITY, CHARGING INTEGRATION, TARGETED CERVICAL AND LIMB MASSAGE

(51) International classification	:A61H 15/00, A61H 1/00, A47C 1/032, A47C 1/035, A47C 1/024
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Arul Kulandaivel

(57) Abstract :
ABSTRACT Modified reclining chair containing adjustability, charging integration, targeted cervical and limb massage. The said chair relates to a modified reclining chair incorporating advanced adjustability mechanisms, integrated charging facilities and targeted massage systems. The Present invention focuses on a multifunctional reclining chair capable of providing targeted cervical (neck) and limb massage, while simultaneously supporting modern lifestyle requirements such as electronic device charging and personalized posture control. The modified reclining chair of the present invention is engineered to address limitations found in conventional reclining chairs, which typically offer limited adjustability, lack therapeutic features and do not support integrated electronic utilities. The present invention combines mechanical, electrical, and ergonomic innovations into a single, user-centric design.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006686 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Automated Structural Health Monitoring System Using IoT Sensors

(51) International classification	:G06N 3/08, G06N 3/04, G01L 1/16, H04W 4/38, H04L 29/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Kodavati Divya Bharathi, ASP-KNRCER
(72)**Name of Inventor :**
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2)Dr. Kodavati Divya Bharathi, ASP-KNRCER

(57) Abstract :
This invention presents an Automated Structural Health Monitoring (SHM) System harnessing IoT sensors for real-time anomaly detection and integrity prediction in civil infrastructures like bridges, buildings, and dams. Comprising wireless sensors (accelerometers, strain gauges, piezoelectric, temperature/humidity) linked to node processors, the system preprocesses data at the edge and transmits via LoRaWAN gateways to a secure cloud IoT platform using MQTT/AMQP protocols. A trigger function client evaluates streams against thresholds, routing to ML analytics (neural networks, SVM, clustering) for feature extraction, probabilistic forecasting, and a singular health status correlating multi-parameters like stress, vibration, and cracks. Cloud storage archives datasets, while dashboards visualize trends and heat maps; pub-sub alerts notify via SMS/email for preemptive maintenance. Innovations include wireless scalability sans cabling, hybrid ML for noise-robust predictions, and cost-effective remote viability, validated on lab beams matching experimental integrity curves.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006694 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Temporal Control transfer Protocol for Coordination-free Concurrency control in Distributed Systems

(51) International classification	:G06F 9/46, G06F 9/50, G06F 15/16, H04L 29/06, G06F 9/48
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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2)B. Fairoz Banu

(57) Abstract :
A coordination-free concurrency control architecture for distributed computing systems that enforces temporal exclusivity through structural execution-path termination. The architecture decouples an active control plane from a passive data plane by positioning a Protocol Enforcement Layer (PEL) upstream of all write-capable execution interfaces of a primary state store. During a temporal control transfer interval, the PEL renders all state-mutating and admissibility-determining execution paths architecturally unreachable by terminating request-processing paths prior to invocation of any backend logic. Temporal control transfer authority is assigned exclusively to a logically isolated Parallel State Machine (PSM), which maintains a fine-grained sub-interval state external to the primary state store and performs deterministic overlap validation without runtime coordination. Upon interval termination, a single atomic and idempotent reconciliation operation transitions the primary state store directly from a pre-transfer to a post-transfer state, exposing no intermediate state. The architecture enforces temporal exclusivity without modifying the primary state store, without locks, signaling, or coordination, and without permitting generation of any admissibility-enabling artifact for transferred intervals.

No. of Pages : 53 No. of Claims : 23

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006695 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An AI-Enabled Transaction Monitoring System for Predicting Credit Card Fraud in Financial Domain

(51) International classification	:G06Q 40/02, G06Q 20/40, G06N 20/20, G06Q 40/00, G06N 20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides an AI-enabled transaction monitoring system designed to predict credit card fraud in real time within financial domains. It integrates machine learning, deep learning, and ensemble techniques to analyze transactional data and determine fraud likelihood. The system offers high prediction accuracy, reduced false positives, and explainable outputs for analysts. With real-time data ingestion, adaptive learning, and scalable deployment, the invention provides an intelligent fraud detection framework suitable for modern financial institutions.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006704 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTONOMOUS SELF-DEBUGGING CODE REGENERATION SYSTEM

(51) International classification	:G06F 11/36, G06F 9/44, G06F 11/07, G06F 9/445, G06F 8/41
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Disclosed herein is an autonomous self-debugging code regeneration system (100), the system (100) comprises a user device (102) configured to provide program code, a communication network (106) configured to establish a communication link for data transmission with the system (100), a processing unit (108) configured to process the program code, which further comprises a data input module (110) configured to receive program code, a code execution module (112) configured to execute received program code in an isolated runtime environment, an error detection module (114) configured to detect the presence of execution errors, an error classification module (116) configured to classify the detected execution errors into predefined error categories, a code correction module (118) configured to select a corrective action strategy, a code regeneration module (120) configured to generate revised program code, a verification module (122) configured to verify the program code, an output module (126) configured to transmit the outputs.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006705 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN SMART IRRIGATION SYSTEM FOR OPTIMIZED CROP WATERING

(51) International classification	:A01G 25/16, A01G 25/02, G06Q 50/02, A01G 27/00, G05B 13/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)UTSAVI RAI
2)DR. BHOJARAJA B E

(57) Abstract :
ABSTRACT Disclosed herein is an AI-driven smart irrigation system (100) for optimized crop watering comprising a plurality of soil moisture sensors (102) measuring real-time soil water content, a weather data acquisition unit (104) receiving meteorological forecasts, an automated drip irrigation assembly (106) with zone-specific valves, and a processing unit (110) connected via communication network (108), the processing unit (110) comprising growth stage detection module (116) classifying crop phenological phases for differentiated irrigation strategies, predictive demand module (118) forecasting water requirements by integrating soil dynamics, evapotranspiration, and historical responses, confidence scoring module (120) evaluating sensor reliability and prediction uncertainty for risk-aware automation, water optimization module (122) computing irrigation volumes targeting maximum water productivity, and self-learning feedback module (124) continuously refining model parameters by comparing predicted versus actual soil moisture and crop responses for proactive irrigation management and water efficiency optimization.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006706 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A VEHICLE DRIVER ALERTNESS SYSTEM

(51) International classification	:G08B 21/06, A61B 5/00, A61B 5/16, B60W 40/08, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)MR. MAHABALESHWARA SHARMA K

(57) Abstract :
ABSTRACT Disclosed herein is a vehicle driver alertness system (100) comprises a central processing unit (102) configured to execute real-time driver-monitoring algorithms, analyse multimodal sensor data, and generate alert signals. The system also includes a vision-based monitoring module (104) configured to capture real-time facial images. The system also includes a physiological sensing module (106) configured to measure pulse characteristics. The system also includes a drowsiness-detection unit (108) configured to compute Percentage of Eye Closure (PERCLOS), classify fatigue levels from vision and physiological data. The system also includes an alert-generation module (110) configured to provide multimodal feedback. The system also includes a pulse-transformer-based stimulation unit (112) configured to generate low-energy, time-bound electrical pulses, the transformer providing galvanic isolation. The system also includes a safety-control module (114) configured to regulate stimulation intensity, prevent electrical surges, and ensure that the electrical feedback.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006707 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : REAL-TIME VISION-BASED GESTURE CONTROLLED ROBOTIC HAND SYSTEM

(51) International classification	:B25J 9/16, B25J 13/08, G06K 9/00, B25J 15/00, B25J 15/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)DR. MANJUNATHA BADIGER

(57) Abstract :
ABSTRACT Disclosed herein is a real-time vision-based gesture-controlled robotic hand system (100), the system (100) comprises a user device (102) captures real-time images and videos, a robotic hand (108) replicates human hand movements, which further comprises a palm base (110) provides structural support, a plurality of servo motors (112) controls the angular position, a plurality of fingers (114) performs bending and extension motions, a microcontroller (128) processes data, which further comprises a data input module (130) receives data, a data processing module (132) converts the received data, a landmark extraction module (134) extracts hand landmarks, a landmark identification module (136) identifies specific finger and palm landmark, a palm center computation module (138) computes the geometric center, a gesture classification module (140) classifies the hand posture, a command translation module (142) translates the classified gesture, a robotic motion control module (144) actuates the translated commands, an output module (148) transmits the outputs.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006708 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A FORMULATION FOR APREMILAST DELIVERY AND METHOD OF PREPARATION THEREOF

(51) International classification	:A61K 31/4035, A61K 47/24, A61K 9/00, A61K 9/06, A61P 17/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)DR. SINDHOOR S M
4)DR. ASHWINI PRABHU

(57) Abstract :
ABSTRACT Disclosed herein is a formulation (100) for Apremilast delivery. The formulation (100) comprises a non-covalent complex (102) adapted to present an active pharmaceutical ingredient in a skin-penetrating and topically bioavailable form and a topical composition (104) adapted to incorporate and stabilize the non-covalent complex (102), and improve the spreadability of the formulation (100) for topical application. The non-covalent complex (102) comprises a predefined quantity of Apremilast (112) functioning as the active pharmaceutical ingredient of the formulation (100). The non-covalent complex (102) also comprises a predefined quantity of a phospholipid (114) configured to enhance topical retention and dermal penetration of Apermilast (112).
No. of Pages : 23 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006709 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A NEURO-SYMBOLIC SYSTEM AND A METHOD FOR QUANTITATIVE RISK SCORING FROM STRUCTURAL MRI DATA

(51) International classification	:G16H 50/20, G06V 10/764, G16H 50/30, G06N 3/04, G01R 33/56
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)RAMESH VADDI
6)SIVA SANKAR YELLAMPALLI

(57) Abstract :
ABSTRACT A NEURO-SYMBOLIC SYSTEM AND A METHOD FOR QUANTITATIVE RISK SCORING FROM STRUCTURAL MRI DATA The present disclosure relates to a neuro-symbolic image processing system (100) and method for generating a quantitative risk score from structural magnetic resonance imaging (MRI) data to facilitate interpretable Alzheimer's disease screening. The system (100) comprises a data ingestion and pre-processing module (102) for extracting a 2D hippocampal slice and computing volumetric biomarkers via an automated segmentation pipeline (106). A hybrid neural-symbolic processing engine (104) utilizes a compact CNN (110) for visual features and a neuro-symbolic reasoning unit (130) to compute attention weights over learnable rule vectors (132) representing clinical observations. A fusion and calibration module (140) employs isotonic regression (144) and a logistic regression meta-learner (146) to produce well-calibrated risk scores. A decision support interface (150) compares scores against predetermined thresholds (152) and generates interpretable explanation reports (154). The method ensures clinically trustworthy screening suitable for resource-constrained edge hardware.

No. of Pages : 38 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006711 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Agricultural produce cleaning and bagging machine having non-metallic screw conveyor and engineered airflow separation

(51) International classification	:A23N 12/02, B07B 4/02, B07B 4/08, B07B 11/06, B07B 7/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
Agricultural produce cleaning and bagging machine having non-metallic screw conveyor and engineered airflow separation [0042] The present invention relates to an agricultural produce cleaning and bagging machine (100) performs post-harvest cleaning and separation of impurities from bulk agricultural produce (100a). The machine (100) comprises a produce receiving unit (102) for receiving bulk agricultural produce, a mechanical conveyance unit (104) for transporting produce using a non-metallic screw, and an impurity separation unit (106) positioned downstream of mechanical conveyance unit (104) for separating impurities through engineered airflow interaction. A cleaned produce discharge unit (108) discharges cleaned agricultural produce (100b), while a waste discharge unit (110) discharges separated waste (100c). A power and control unit (112) supplies and regulates electrical power for coordinated operation. The non-metallic screw reduces mechanical stress on produce, and airflow interaction separates lighter impurities from heavier produce, enabling efficient cleaning under farmgate operating conditions.

No. of Pages : 23 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006715 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR PRIVACY-PRESERVING DEEP PACKET INSPECTION OF ENCRYPTED NETWORK TRAFFIC

(51) International classification	:H04L 12/46, H04L 29/06, H04L 9/32, H04L 9/40, H04L 12/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)K Rajesh Kumar
4)Dilip Kumar Singh
5)Sunil Kumar Gupta

(57) Abstract :
Disclosed is a system and method for privacy-preserving deep packet inspection of encrypted network traffic. A client device 104 generates network packets and derives, using a cryptographic transformation technique, a network packet token based on packet attributes. A rule generator 102 associated with a server device 106 produces inspection rules compatible with DPI, ACL, IDS, IPS, or advanced DPI frameworks, and transforms each rule into an inspection rule token before transmitting the rule tokens to the server. The server receives 106 the packets, packet tokens, and rule tokens through a secure Virtual Private Network (VPN). A packet processing DPI (PP-DPI) unit 116 performs privacy-preserving matching between the network packet token and the inspection rule token and applies the corresponding rule action when a match is found, or a default action when no match exists. The VPN 108 ensures secure transport of packets and their associated cryptographic tokens between the client and server. FIG. 1

No. of Pages : 51 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006720 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Dietary Recommendation System Based on Machine Learning

(51) International classification	:G16H 20/60, G16H 50/30, G16H 50/20, G16H 10/60, G16H 50/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)G.Lucy
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(57) Abstract :
The present invention relates to a machine learning–based dietary recommendation system designed to provide personalized diet plans according to an individual's health profile. The system utilizes a Decision Tree Classifier to analyze multiple parameters including age, gender, body mass index (BMI), disease type, disease severity, physical activity level, and dietary restrictions. Based on the processed data, the system classifies users into suitable diet categories such as Low-Carbohydrate, Low-Sodium, or Balanced diets. The trained model enables real-time dietary recommendations by storing and reusing learned patterns, thereby ensuring fast and accurate results. The invention supports effective management of chronic diseases such as diabetes and hypertension, improves dietary adherence, and promotes overall health and wellness through data-driven nutritional guidance.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006721 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SECURE, OFFLINE-CAPABLE, AND PRIVACY-PRESERVING MENTAL-HEALTH TRIAGE WITH STRUCTURED INTERVENTIONS AND ASSOCIATED DASHBOARD ANALYTICS

(51) International classification	:G16H 40/20, G16H 10/60, G06F 21/62, G16H 40/67, G16H 50/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(57) Abstract :
The present disclosure describes secure, offline-capable, and privacy-preserving mentalhealth triage of users (210) with structured interventions and associated dashboard analytics. In one aspect, a computing device (220) is configured to: (a) perform secure user authentication, (b) receive, based on a predefined taxonomy, hierarchical user selections related to user's mental state, emotion tags of the user selections, and actions/behaviors depicting user's physical and mental state. The device is configured to (c) compute composite distress score based on the user selections; (d) assign a distress band to the user based on the distress score; and (e) initiate varied levels of structured intervention sequences based on the distress band for mental-health triage of the user. The device is configured to generate a cryptographic signed token after each of steps (b) to (e) and sequentially link the signed tokens in a tamper-evident token chain to restrict access of the user selections and user interactions. FIG. 4A, 4B

No. of Pages : 77 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006722 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Eco-Friendly Process for Extraction and Implementation of Leaf-Based Natural Dyes in Textiles

(51) International classification	:D06P 1/00, C09B 61/00, D06P 3/60, D06P 5/00, D06P 1/38	(71)**Name of Applicant :** **1)Malla Reddy Engineering College** Address of Applicant :Maisammaguda (Post. Via. Kompally), Mechal-Malkajgiri-500100. Telangana. Hyderabad Telangana India **2)Y Sudha** **3)Dr. P. Marimuthu**
(31) Priority Document No	:NA	
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(86) International Application No Filing Date	: :01/01/1900	**2)Y Sudha** **3)Dr. P. Marimuthu**
(87) International Publication No	: NA	**4)Dr. S. Udaya Bhaskar**
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
ABSTRACT A sustainable and environmentally friendly method of dyeing textiles with natural colours made from plant leaves. By offering a biodegradable, non-toxic substitute appropriate for contemporary textile applications, the invention tackles the environmental and health issues related to synthetic dyes. Selecting pigment-rich leaves from appropriate plant sources is the first step in the process. These leaves are then carefully cleaned and mechanically treated to improve their surface area for effective pigment extraction. In order to maximize pigment production while maintaining dye stability and colour purity, dyes are extracted using aqueous or mild natural solvent techniques under carefully regulated temperature and time conditions. To enhance colour strength and uniformity, the recovered dye solution may be concentrated after being filtered to eliminate solid particles. The application of natural dyes to a variety of textile textiles, including cotton, silk, wool, and blended materials, is another aspect of the innovation. To increase the absorption of dye and improve colour fastness, the materials may be pre-treated or mordanted with natural or non-toxic mordants before dying. treatments like immersion, cushioning, or surface application are used for dyeing, which is followed by drying and environmentally friendly fixing treatments. The newly developed technique produces colour hues that are consistent, vibrant and repeatable with better wash and light fastness qualities. The technology encourages environmentally friendly textile production by removing dangerous chemicals and lowering water pollution. the creation of high-quality, marketable, and sustainable natural-dyed fabrics, the technique promotes the adoption of green technologies and the establishment of sustainable livelihoods for artisans and small-scale textile companies.

No. of Pages : 7 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006723 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A HYBRID PREDICTIVE MODELING METHOD FOR EARLY DETECTION OF LUNG CANCER USING MULTIMODAL CLINICAL DATA

(51) International classification	:G16H 10/60, G16H 50/20, G16H 50/30, G06N 20/00, G16H 50/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)DR. SAVITHA

(57) Abstract :
ABSTRACT Disclosed herein is a hybrid predictive modeling method for early detection of lung cancer using multimodal clinical data (100) comprises collecting patient data (102), including demographic, clinical, lifestyle, comorbidity, and psychosocial variables. The method also includes performing statistical pre-processing (104). The method also includes executing feature engineering and standardization (106). The method also includes applying supervised classification algorithms (108). The method also includes validating and calibrating the predictive models (110). The method also includes providing explainable and interpretable output (112). The method also includes selecting an optimal predictive model (114) based on performance metrics.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006724 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WASTE SORTING AND INCINERATION SYSTEM

(51) International classification	:B09B 3/00, F23G 5/04, B09B 5/00, F23G 5/00, F23J 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Disclosed herein is a waste sorting and incineration system (100). The system (100) comprises a feed chute (102) for receiving mixed waste, a sorting unit (106) for classifying waste into dry, wet, and non-incinerable categories, and a drier unit (114) equipped with an air blower (116) for moisture removal. A homogenizer (120) produces a uniform feed for a combustion chamber (124), which converts the waste into ash, heat, and flue gases. A residue collection chamber (128) stores solid by-products, while a flue gas treatment unit (130) filters and cools emissions. A plurality of sensors (172) and an RGB camera (108) capture real-time physical, chemical, and visual waste characteristics. A processing unit (138) integrates modules for input acquisition, pre-processing, sensor synchronization, feature extraction, classification, drier setpoint selection, combustion evaluation, predictive maintenance, risk scoring, and output generation. A user device (168) receives alerts, reports, and charts via an application programming interface (170).

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006725 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NANO-REINFORCED FIBRE-BASED POLYMER COMPOSITION AND METHOD THEREOF

(51) International classification	:C08L 97/02, C08J 5/04, C08J 5/06, C08J 5/24, C08L 61/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)DR. ROHIT SINGH

(57) Abstract :
ABSTRACT Disclosed herein is a nano-reinforced fibre-based composition (100) and method thereof, the composition (100) comprising a plant-derived bast fibre (102) in a predefined quantity enhance tensile strength, fatigue resistance, and durability, a thermosetting polymer (104) in a predefined quantity promote interfacial bonding with the plant-derived bast fibre (102), and maintain mechanical stability under fatigue and environmental aging, a nano-reinforcement particles (106) in a predefined quantity prevent formation of micro-cracks and decelerate crack propagation under cyclic loading. The composition may include the plant-derived bast fibre (102) is a hemp fibre act as the primary load-bearing reinforcement, providing high specific tensile strength, stiffness, and impact energy absorption. The composition may include thermosetting polymer (104) is an epoxy resin promote uniform cross-linking, and preserve the structural integrity under mechanical loads. The composition may include the nano-reinforcement particles (106) minimize the moisture and chemical permeation, mitigate chemical degradation during aging, and preserve mechanical stability.
No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006732 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Eco-Legal Multi-Compartment Waste Bin with Legally Indicative Design for Statutory Compliance

(51) International classification	:B65F 1/00, B65F 1/14, B65F 1/16, B65F 1/06, B65F 1/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Nikhil Biju

(57) Abstract :
ABSTRACT: Eco-Legal Multi-Compartment Waste Bin with Legally Indicative Design for Statutory Compliance This invention describes an eco-legal ornamental design for a multi-compartment waste segregation bin, aimed at ensuring public adherence to statutory waste disposal categories. The system integrates biomedical, plastic, organic, and e-waste compartments within a singular chassis. Each compartment is visually and tactually distinguished by embossed legal symbols and CPCB-recommended color codes. The lid incorporates a stylized ornamental ring forming a recycling triangle, where each vertex functions as a waste insertion point. The bin promotes intuitive compliance through standardized visual cues, facilitating lawful segregation in public, academic, and industrial zones. Elevated from the ground and engineered with drainage perforations, the design supports hygienic and durable use. All visual elements are protected under the Indian Designs Act. The invention thus serves dual roles—as a legally compliant utility object and a public-facing communicative tool for sustainable behavior.

No. of Pages : 19 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006733 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Hazard-Safe Waste Container with Embedded Legal Symbols for Regulatory-Compliance Waste Transportation

(51) International classification	:B65F 1/00, B65F 1/14, B65D 43/02, B65F 1/16, B65F 1/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Nikhil Biju

(57) Abstract :
ABSTRACT: Hazard-Safe Waste Container with Embedded Legal Symbols for Regulatory-Compliance Waste Transportation This invention describes a hazard-safe waste transport container that integrates visual legal symbolism into its structural design to enhance regulatory compliance and public risk awareness during the handling of hazardous and industrial waste. The container features a chemically inert, reinforced polymeric body with triangular ribs mimicking hazard signage for structural and symbolic utility. Raised ornamental bands embossed with regulatory classification symbols—such as flames, skulls, and eco-leaves—are permanently integrated, ensuring visual clarity and non-removability. The crown-shaped lid with gear-tooth edges adds tamper resistance, regulatory symbolism, and improved grip. The visual elements do not alter the container's core material or structural function but serve to communicate legal waste categories under Indian hazardous waste transport rules. This legally intuitive and standardized design improves identification, durability, and compliance with the Indian Designs Act, 2000, across waste transport sectors including industrial, municipal, and interstate waste logistics.

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006734 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Eco-Certification Seal Integrating Legal and Environmental Motifs for Verified Zero-Waste Compliance

(51) International classification	:G09F 3/02, G09F 3/03, G09F 3/00, B42D 15/00, G09F 3/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Eco-Certification Seal Integrating Legal and Environmental Motifs for Verified Zero-Waste Compliance This invention describes an ornamental eco-certification seal designed to authenticate zero-waste compliance within India's environmental and legal ecosystems. The seal functions as a standardized visual identifier denoting sustainable practices, enforceable under the Indian Designs Act. Structurally, it comprises three symbolic layers: an outer ring of stylized leaves denoting ecological diversity; a central construct featuring the recycling triangle merged with the scales of justice to reflect legal-sustainability integration; and a translucent Ashoka Chakra symbolizing national authority and cultural legitimacy. Designed for application on municipal documentation, product labels, and civic signage, the seal provides a versatile and scalable solution for visible environmental compliance. Beyond aesthetics, the seal acts as a regulatory proxy, facilitating recognition during audits, certifications, and public inspections. It is intended to be issued by designated regulatory bodies to compliant organizations. This seal bridges the interpretive gap between sustainability protocols and public understanding, reinforcing transparency, trust, and ecological responsibility.

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006745 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IoT-Enabled Smart Campus Management System with Energy and Resource Optimization

(51) International classification	:G06Q 50/20, G06Q 10/06, G06Q 10/04, H04L 29/08, G06Q 50/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract The present invention relates to an IoT-Enabled Smart Campus Management System designed for energy and resource optimization. The system integrates IoT sensors, intelligent analytics, and automated control mechanisms to monitor and manage campus utilities in real time. By optimizing energy consumption and resource usage, the invention improves operational efficiency, sustainability, and decision-making across educational and institutional campuses.

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006753 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Chemical Contaminants in Food Products Identification System.

(51) International classification	:G01N 33/02, G01N 27/416, G01N 27/26, G01N 27/327, G01N 27/49
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Food Contamination Chemical Identifying System This invention is a description of an intelligent system that is meant to detect, categorize, and measure the chemical contaminants present in food products by applying an integrated sensorbased and artificial intelligence-driven analytical platform. Multi-mode chemical sensors that are incorporated in the system include spectroscopic sensors, electrochemical sensors and biosensors that are used to analyze raw, processed and packaged foods. The data of the chemical signature in sensor forms are transmitted to an edge or cloud based computational engine where machine-learn algorithms are used to recognize pesticides residues, heavy metals, adulterants, and veterinary drug residues among other harmful chemical pollutants. The system will also align the contaminant level with type of food, food processing processing level and regulatory compliance levels to yield real time contamination warning and compliance evaluation. The food supply chain can be rapidly intervened with the help of automated reporting, traceability logging, and decision-support mechanisms. The invention facilitates rapid, scalable and precise food safety surveillance and lessens reliance on laboratory-based testing as well as enhances preventive food quality management across agricultural, industrial and retail settings.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006769 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN INTELLIGENT IOT AND DEEP LEARNING–BASED SYSTEM FOR REAL-TIME ENERGY SAVING AND FINANCIAL GROWTH IN SMART EDUCATIONAL CAMPUSES

(51) International classification	:G06Q 50/20, G06N 3/08, G06N 3/04, H04L 29/08, G05B 15/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An Intelligent IoT and Deep Learning–Based System for Real-Time Energy Saving and Financial Growth in Smart Educational Campuses is the proposed invention. The proposed invention is an intelligent Internet of Things (IoT) and deep learning–based system for real-time energy saving and financial growth in smart educational campuses. The system utilizes distributed IoT sensors and smart meters to continuously monitor energy usage, occupancy, environmental conditions, and equipment status across campus facilities. Advanced deep learning models analyze the collected data to predict energy demand, detect anomalies, and optimize energy consumption dynamically. Automated control mechanisms regulate lighting, HVAC systems, and electrical devices based on real-time insights, thereby minimizing energy wastage while maintaining user comfort. In addition, the system incorporates financial analytics and predictive maintenance modules to reduce operational costs, support budget planning, and enhance long-term financial efficiency. The proposed solution offers a scalable, adaptive, and environmentally sustainable framework that supports green campus initiatives while enabling data-driven decision-making for improved energy efficiency and financial performance in educational institutions.

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006770 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PORTABLE AI DRIVEN BLOOD BASED DISEASE DETECTION INSTRUMENT

(51) International classification	:G01N 33/49, B01L 3/00, A61B 5/15, G01N 33/487, G01N 33/48
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A PORTABLE AI DRIVEN BLOOD BASED DISEASE DETECTION INSTRUMENT The present invention provides a portable AI-driven blood-based disease detection instrument for preventing the death rate in an effective manner. The instrument comprises a portable housing configured for handheld or point-of-care operation. The blood sample collection module comprising a disposable test strip or microfluidic cartridge adapted to receive a blood sample. The biosensing unit operatively coupled to the blood sample collection module and configured to detect one or more biochemical, molecular, or cellular biomarkers present in the blood sample. The signal conditioning and data acquisition unit configured to convert detected biomarker signals into digital diagnostic data. The memory unit configured to store patient data, diagnostic models, and historical test results. The user interface comprising a display and input controls for presenting diagnostic results and receiving user commands. The wireless communication module configured to transmit diagnostic data to an external device or cloud platform. Fig 1

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006826 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A CLOUD-BASED SYSTEM FOR HOSPITALITY BUSINESS INTELLIGENCE

(51) International classification	:G06Q 10/06, G06Q 40/00, G06Q 30/02, G16H 40/20, G06N 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A CLOUD-BASED SYSTEM FOR HOSPITALITY BUSINESS INTELLIGENCE A cloud-based hospitality business intelligence system is disclosed that integrates data from multiple hospitality operational platforms into a unified cloud architecture. The system performs real-time and predictive analytics to generate actionable insights related to occupancy, revenue, operations, and guest experience. Role-based dashboards and alerts enable proactive decision-making for hospitality stakeholders. The system improves operational efficiency, financial performance, and customer satisfaction through scalable, secure, and intelligent analytics. Figure of abstract: FIG. 1.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006861 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HYBRID PNEUMATIC STARTING SYSTEM FOR INTERNAL COMBUSTION ENGINES

(51) International classification	:F02N 11/08, F01B 23/10, F02N 19/00, F01N 5/02, F02N 11/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Embodiments of the present disclosure relate to a system (100) and a method (300) for starting an internal combustion engine (140) of a vehicle. The system (100) includes a vehicle electrical power source (102), an electric motor (104), a compressor (106) mechanically coupled to the electric motor (104) to compress ambient air (108), and a pneumatic storage tank (110) configured to store compressed air. A pneumatic motor (136) is mechanically coupled to an engine cranking mechanism (138). During a normal operating condition, compressed air from the pneumatic storage tank (110) is selectively supplied to the pneumatic motor (136) through an electronically controlled pneumatic flow path (128) to crank the internal combustion engine (140). During an electrical failure condition, a manually actuated pneumatic override mechanism (130) delivers compressed air to the pneumatic motor (136) independently of the vehicle electrical power source (102), thereby enabling engine starting in both operating conditions.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006862 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : APPARATUS AND METHOD FOR WASTE RECYCLING AND SEGREGATION USING MACHINE LEARNING

(51) International classification	:B09B 3/00, B09B 5/00, B03B 9/06, B03C 1/30, B03C 1/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure provides an apparatus (100) for waste recycling and segregation using machine learning. The apparatus (100) includes a hopper (102) that directs mixed waste onto a conveyor (104). A segregation chamber (106-1) is coupled to the hopper (102) to receive and segregate the mixed waste. A horizontal crusher (108) is coupled to the chamber (106-1) to crush the segregated waste. A magnetic separator (110) disposed with the horizontal crusher (108) extracts metals from the crushed waste. A density-based segregation system (114) is coupled downstream of the magnetic separator (110) to separate waste materials of varying densities. A heating chamber (118) follows the segregation system (114) to remove moisture from the waste materials of a specific density. A waste segregation system (114-1) positioned downstream of the heating chamber (118) employs sensor units and a processor (130) to identify and sort hazardous waste materials using a machine-learning engine.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006863 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : METHOD OF PREPARATION OF 9-METHOXY-5,9-DIMETHYLDEC-4-ENALS AND PERFUME COMPOSITION THEREOF

(51) International classification	:C07C 41/16, C07C 41/30, C07C 41/18, C07C 41/26, C07C 41/48
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to a method of preparation of 9-methoxy-5,9-dimethyldec-4-enal of Formula (I), the method comprising: a) heating a solution of 6-methylhept-5-en-2-one of Formula (II) with an acid and a methylating agent to obtain a 6-methoxy-6-methylheptan-2-one of Formula (III); b) adding an organomagnesium reagent to the 6-methoxy-6-methylheptan-2-one of Formula (III) to obtain a 7-methoxy-3,7-dimethyloct-1-en-3-ol of Formula (IV); c) heating the 7-methoxy-3,7-dimethyloct-1-en-3-ol of Formula (IV) with enol ether in the presence of a catalyst to obtain a 3-(ethenyloxy)-7-methoxy-3,7-dimethyloct-1-ene of Formula (V); and d) heating the 3-(ethenyloxy)-7-methoxy-3,7-dimethyloct-1-ene of Formula (V) to obtain a 9-methoxy-5,9-dimethyldec-4-enals of Formula (I). The present disclosure also provides a perfume composition comprises: 4 to 6 wt% of 9-methoxy-5,9-dimethyldec-4-enal of Formula (I) as defined above; 45 to 60 wt % of one or more fragrance ingredient; and 35 to 50 wt% of one or more carrier solvent.

No. of Pages : 26 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006883 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A FOOTWEAR STRUCTURE INCORPORATING DETACHABLE THERAPEUTIC WEIGHTS AROUND WEIGHT MOUNTING REGION VIA A SECURE MECHANISM

(51) International classification	:A43B 13/18, A43B 13/14, A43B 7/14, A43B 5/00, A43B 13/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A footwear structure incorporating detachable therapeutic weights around weight mounting region via a secure mechanism is disclosed. The footwear structure (100) includes a forefoot portion (120) of a sole (110) adapted to receive a user's (130) toes, wherein the forefoot portion is devoid of a heel segment, thereby enabling exclusive forefoot engagement with a ground surface during motion. The sole further comprises a weight mounting region (140) within the forward portion, dimensioned to receive one or more interchangeable mass elements (150) to provide therapeutic customization. A retention mechanism is operatively coupled to the cavity to releasably secure the mass elements. The footwear structure further includes an adjustable support element (170) disposed around the ankle region and operatively linked to the forefoot portion to stabilize a forefoot-directed load, thereby optimizing fit, stability, and controlled resistance to facilitate targeted musculoskeletal conditioning and therapeutic benefit. FIG. 1

No. of Pages : 33 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
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(21) Application No.202641006884 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DISTRIBUTED DATA PROCESSING SYSTEM FOR HOSPITALITY INTELLIGENCE

(51) International classification	:G06N 20/00, G06Q 10/06, G16H 40/20, G06Q 10/04, G06Q 30/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
A DISTRIBUTED DATA PROCESSING SYSTEM FOR HOSPITALITY INTELLIGENCE The present invention discloses a distributed intelligent data processing system and method for hospitality intelligence. The system ingests hospitality-related data from heterogeneous sources, processes the data using distributed real-time and batch analytics and applies machine learning models to generate predictive and prescriptive insights. An intelligent decision orchestration layer produces automated recommendations for revenue optimization, operational efficiency, workforce management, energy optimization, and guest experience enhancement. The invention enables scalable, real-time, and adaptive hospitality intelligence across distributed hospitality environments. Figure of abstract: FIG. 1.

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006902 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ARTIFICIAL INTELLIGENCE (AI)-BASED SYSTEM AND METHOD FOR MONITORING AND MANAGING DOSHA BALANCE AND HEALTH USING AYURVEDIC PRINCIPLES

(51) International classification	:G16H 40/67, G16H 50/30, G16H 10/60, A61B 5/00, G16H 20/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to an artificial intelligence (AI)-based system and method for monitoring and managing dosha balance and health using Ayurvedic principles. The system includes a wearable device comprising sensors configured to capture health data and transmit the data to a computing device. An encrypted database stores user data, including State of Dosha (SOD), health data, response data, lifestyle routines, dietary intake, baseline health profile, environmental data such as location and weather, and physiological parameters representing Vata, Pitta, and Kapha doshas. The computing device, in communication with encrypted database and wearable device, analyzes the collected data to generate a personalized baseline health profile. The system calculates a real-time SOD using a hybrid weighted model that integrates health data, user inputs, environmental factors, and baseline health information. When the SOD exceeds a predetermined threshold, the system generates and communicates personalized recommendations to maintain dosha balance and overall well-being. (Ref. FIG. 1)

No. of Pages : 51 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006903 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Large Language Model–Based Framework for Domain-Specific Reasoning and Controlled Output Generation

(51) International classification	:G06N 5/04, G06N 5/02, G06F 17/27, G06F 17/28, G06F 16/332
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: Large Language Model–Based Framework for Domain-Specific Reasoning and Controlled Output Generation
The invention provides a large language model–based framework for domain-specific reasoning and controlled content generation. The framework integrates a language model core with a domain constraint module, a contextual validation layer, and a response governance module to ensure accuracy, compliance, and contextual fidelity of generated outputs. The domain constraint module imposes structured rules, terminologies, and procedural requirements derived from regulated or specialized knowledge environments. The contextual validation layer verifies candidate responses against curated knowledge sources, ontologies, and structured datasets to detect factual inconsistencies and refine outputs. The response governance module manages compliance, tone, safety, and formatting parameters aligned with legal, healthcare, financial, enterprise, and technical domains. The framework further supports explainability, traceability, and user-controlled customization of output behavior. By combining deep linguistic capabilities with domain-aligned control mechanisms, the invention enables reliable deployment of large language models in mission-critical and regulated environments.

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006904 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Prime-Residue Adaptive Hardware Clock for Ultra-Secure Time Synchronization

(51) International classification	:G06F 1/14, H04L 7/00, H04J 3/06, G06F 1/12, H04L 7/033
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT: Title: Prime-Residue Adaptive Hardware Clock for Ultra-Secure Time Synchronization A hardware-based time synchronization device employing prime-residue adaptive clocking is disclosed. The device generates clock ticks based on modular residues derived from dynamically selected prime numbers, wherein residue progression governs variable time-step increments while preserving long-term temporal accuracy. A synchronization protocol aligns residue evolution between communicating devices, enabling secure and tamper-resistant time synchronization. The non-uniform external timing pattern significantly reduces susceptibility to spoofing, replay, and desynchronization attacks while maintaining precise internal timekeeping. By embedding number-theoretic behavior directly into clock hardware, the invention provides intrinsic security against timing manipulation without reliance on external references or software-based correction. The invention is applicable to telecommunications, financial systems, distributed computing, and industrial control environments requiring ultra-secure and resilient time synchronization.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006906 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Computer-Implemented Method and System for Bilingual and Regional Language Website Content Optimization for Voice and Text Search

(51) International classification	:G06F 17/30, G06F 17/27, G10L 15/26, G06F 17/28, G10L 15/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: A Computer-Implemented Method and System for Bilingual and Regional Language Website Content Optimization for Voice and Text Search The present disclosure relates to a computer-implemented method and system for optimizing bilingual and regional language website content for both voice-based and text-based search queries. The invention addresses challenges arising from code-mixed language usage, phonetic spellings, dialectal variations, and conversational voice search behavior. The system receives voice or text inputs, performs language identification and bidirectional phonetic transliteration, and generates separate keyword optimization strategies for voice and text searches. A dynamic metadata control module generates and updates website metadata based on regional search trends using threshold-based triggers, confidence scoring, and rollback mechanisms to ensure optimization stability. Performance feedback loops continuously refine the optimization process based on user behavior and device patterns. The invention significantly enhances content discoverability across search engines and voice assistant platforms while minimizing manual intervention.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006907 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Artificial Intelligence (AI)–Based System for Detection and Response to Aquatic Safety Events and Method Thereof

(51) International classification	:G08B 21/02, B63C 9/20, G08B 25/01, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(57) Abstract :
ABSTRACT: Title: Artificial Intelligence (AI)–Based System for Detection and Response to Aquatic Safety Events and Method Thereof The present disclosure proposes an artificial intelligence (AI)–based system (100) for detecting, localizing, and responding to safety events involving humans in aquatic environments. The AI-based system (100) comprises plurality of capturing units (102), a control system (104), and plurality of buoyant rescue devices (110). The artificial intelligence (AI)-based system (100) operates autonomously without continuous human supervision or manual intervention, thereby reducing response time in emergency situations. The AI-based system (100) can accurately determine the location of a person in distress using sensor-based or reference-based techniques without reliance on continuous network connectivity or global positioning systems. The AI-based system (100) can intelligently verify distress conditions, adapt response actions based on situational factors, and coordinate one or more autonomous response units to safely assist individuals in diverse and dynamic water environments.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641006925 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GRAVITY-ALIGNED SINGLE VECTOR CONTROL FOR PHYSICAL CONTROL AND INTELLIGENCE SYSTEMS

(51) International classification	:G05B 13/04, G05B 13/02, G06F 17/50, B60W 30/18, G05B 19/416
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A control system and method for executing physical motion and energy transfer under persistent physical constraints are disclosed. The system includes one or more actuation or energy transfer elements and a control architecture configured to generate a single resultant execution state that simultaneously resolves multiple governing variables of a same act, including a magnitude component, an orientation or direction component, and a constraint-relative readiness condition. Execution is permitted only when the governing variables are jointly admissible within a stability or readiness window defined relative to the persistent physical constraint, such that incompatible transitions are restrained prior to execution rather than corrected after execution. The control architecture prevents partial execution of governing variables and applies actuation only as a unified execution state. The disclosed system is applicable to robotic systems, marine vessels, aerial vehicles including VTOL and drones, electric vehicles, energy systems, and other constrained physical platforms.

No. of Pages : 82 No. of Claims : 31

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006926 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : APPARATUS AND METHOD FOR AUTOMATIC MEDICINE DISPENSING

(51) International classification	:G16H 20/13, G07F 17/00, A61J 7/04, G06V 30/10, G07F 11/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure provides an apparatus (102) and a method (300) for automatic medicine dispensing. The apparatus (102) includes a storage module to store medicines. The apparatus (102) includes an automatic dispensing mechanism to identify and dispense medicines from the storage module. The apparatus (102) includes an interface module to receive user inputs and generate an invoice. The apparatus (102) includes a controller (118) configured to operate the automatic dispensing mechanism and the storage module, where the controller (118) is configured to receive the user inputs. The controller (118) is configured to determine via an optical character recognition (OCR) unit (114), information from one or more prescriptions. The controller (118) is configured to in response to a determination that the one or more prescriptions are valid, identify and dispense medicines from the storage module. Further, the controller (118) is configured to generate the invoice and record the purchase.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641006983 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Sustainable Smart Farming System integrating Horizontal Soil Cultivation and Vertical Soilless Farming

(51) International classification	:A01G 31/02, G06Q 50/02, A01G 31/06, G06Q 10/04, A01G 31/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION: The invention discloses a Sustainable Smart Farming System integrating Horizontal Soil Cultivation and Vertical Soilless Farming, tackling challenges in resource efficiency, yield optimization, and environmental sustainability. The hybrid platform combines soil-based horizontal plots for robust crops with multi-tiered vertical soilless systems (hydroponics/aeroponics) for space-saving production. IoT sensors monitor key parameters like moisture, pH, temperature, and light, feeding data to AI models for predictive analytics, automated irrigation, nutrient delivery, and climate control. Renewable energy integration minimizes carbon footprint, while nutrient recycling creates a closed-loop ecosystem, reducing water use by up to 70% and energy by 50%. Blockchain ensures traceability from seed to sale, supporting food safety and market trust. Novelty lies in the dynamic AI-orchestrated synergy between modules, enabling adaptive crop management and higher yields (e.g., 2.5x increase in case studies). Applicable in urban and rural settings, this scalable solution promotes food security, reduces land dependency, and aligns with sustainable development goals, fostering resilient agriculture amid climate uncertainties.

No. of Pages : 20 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641007010 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Cathode Material For a Lithium-ion Battery and a Preparation Method Thereof

(51) International classification	:H01M 10/052, H01M 10/0525, H01M 4/36, H01M 4/02, H01M 4/58, H01M 4/136, H01M 4/62, C01B 25/37	(71)**Name of Applicant :** **1)INDUMUKHI B C** Address of Applicant :1968/41 1st Main, 2nd Cross, B-Block, SS-Layout, Davangere-577004, Karnataka, India Karnataka India **2)Indumukhi B C** **3)Nagaswarupa H P** **4)Ramachandra Naik** (72)**Name of Inventor :** **1)Indumukhi B C** **2)Nagaswarupa H P** **3)Ramachandra Naik**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
ABSTRACT A Cathode Material For Lithium-Ion Batteries and a Preparation Method Thereof The present invention discloses an energy storage system; more particularly, lithium-ion battery cathode material consisting of chromium phosphate-chitosan composite material within a voltage window of 0.3–2.5 V versus Li/Li^+, exhibiting high reversibility, diffusion-assisted lithium intercalation, and long-term cycling stability. This invention further discloses a porous nanostructured chromium phosphate uniformly incorporated within a chitosan biopolymer matrix, forming an inorganic–organic Cr-P-C hybrid cathode with enhanced electronic conductivity, mechanical stability, and ion-transport characteristics. Also discloses a method for synthesizing the chromium phosphate-chitosan composite cathode material resulting in a three-dimensional porous architecture that promotes efficient lithium-ion diffusion and structural integrity during repeated cycling. For lithium-ion batteries, chromium phosphate-chitosan composite material exhibits high energy efficiency and provides desired capacity and rate capability with long-term cycling performance. Dated this 22nd day of January 2026.

No. of Pages : 22 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641007036 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN INSULATOR PLATE AND A LID OF A LID ASSEMBLY

(51) International classification	:H01M 50/147, H01M 50/167, H01M 50/152, H01M 50/55, H01M 50/15
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT AN INSULATOR PLATE AND A LID OF A LID ASSEMBLY Examples of an insulator plate and a lid of a lid assembly, are described. In an example, the insulator plate includes a main body including a first surface 5 and a second surface with the first surface including one or more projections extending orthogonally away and engage with corresponding depressions formed in the lid. In another example, the lid of the battery comprises a lid body including a lower surface and an upper surface with the lower surface including one or more protrusions extending orthogonally away and engage 10 with corresponding recesses formed in the insulator plate. In addition, the present subject matter describes a lid assembly comprising the lid and the insulator plate, which when assembled, the protrusions and depressions of the lid engage with the recesses and projection, respectively of the insulator plate. 15 To be published with FIG. 3

No. of Pages : 31 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641007052 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Multi-Organ Intervention State Space (MOISS) with Gravitational Potential Dynamics, Therapeutic Wavefront Collision Geometry, and Bridge Therapy Recommendation for Critical Care Decision Support

(51) International classification	:A61B 5/00, A61B 5/11, A61B 5/0205, A61B 5/024, A61B 5/055
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention discloses a Multi-Organ Intervention State Space (MOISS) comprising an intervention timing classification apparatus configured to classify intervention timing using gravitational mechanics analogies with mathematically consistent potential field dynamics. The MOISS receives organ trajectory estimates from an upstream state estimation module, which may be implemented as a separate device or system, and processes these estimates through a gravitational potential field mapping engine. Each organ system is modeled as a body in an asymmetric potential field where healthy state corresponds to a stable equilibrium at field minimum and deterioration corresponds to climbing an asymmetric potential gradient toward a critical threshold representing the recoverable basin boundary, beyond which lies a distinct irreversible damage threshold. The apparatus computes escape velocity as the deterioration rate at which the organ will reach the critical threshold and time to escape for organs on deteriorating trajectories. Interventions are modeled as therapeutic wavefronts originating from a healthy state locus and propagating toward the current organ position with pharmacokinetic velocities. The collision geometry computer determines wavefront organ intersection timing, enabling the system to determine whether a candidate intervention can intercept the deteriorating trajectory before irreversible damage occurs. A timing classification engine categorizes each intervention as on time (collision before escape with trajectory reversal), suboptimal (collision before escape with insufficient impulse), late (collision after critical crossing but before irreversible damage), rescue (high impulse collision capable of recovering from near irreversible state), or futile (collision impossible or after irreversible threshold). The apparatus supports bridge therapy recommendation for late interventions, where bridge efficacy is defined computably as post bridge velocity satisfying escape velocity constraints for the required bridge duration. The MOISS operates on a bedside embedded unit without cloud connectivity, performs classification at one hertz or faster using streaming trajectory data, and renders a gravitational vortex visualization enabling clinician comprehension of intervention feasibility within three seconds.

No. of Pages : 19 No. of Claims : 23

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641007057 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR ESTABLISHING A RAINFALL INFILTRATION TANK BASED ON LIMITING INFILTRATION RATE

(51) International classification	:E03F 1/00, G01N 15/08, E03F 5/10, E03F 5/14, C02F 1/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a rainfall infiltration tank system designed based on the limiting infiltration rate of in-situ soil for effective stormwater management and groundwater recharge. The system utilizes site-specific infiltration testing, such as a double-ring infiltrometer, to determine the maximum sustainable soil absorption rate. Based on the measured limiting infiltration rate, the infiltration tank is dimensioned by calculating the required infiltration contact area to ensure that inflow discharge does not exceed soil infiltration capacity. The tank comprises a containment structure having horizontal and vertical infiltration surfaces, layered filtration media including graded aggregates and coarse sand, and filter membranes selected from nylon cloth or geotextile to prevent clogging. Reinforcement elements provide structural stability, and a free storage zone accommodates peak rainfall events. The invention enables controlled percolation of stormwater, thereby reducing surface runoff, mitigating flooding, and enhancing groundwater recharge. The system is adaptable to different soil types and scalable for residential, institutional, and urban infrastructure applications.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641007060 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A GEOGRAPHICAL PATH OPTIMIZATION SYSTEM AND METHOD FOR MULTI-RADIO MOBILE AD HOC NETWORKS (MANETS)

(51) International classification	:H04W 84/18, H04W 40/24, H04W 40/02, H04L 12/56, H04L 12/28
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
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(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
[031] A geographical path optimization system and method for multi-radio Mobile Ad Hoc Networks (MANETs) is disclosed. The invention enables intelligent, location-aware routing in decentralized and infrastructure-less wireless environments by utilizing real-time geographical positioning, node mobility information, and heterogeneous radio interface characteristics. Each mobile node dynamically computes optimal communication paths using a composite path cost function that integrates geographical distance, link stability, radio performance, interference levels, and energy constraints. The system further incorporates predictive mobility analysis to proactively adapt routing paths and support seamless radio interface switching prior to link degradation. The proposed invention improves packet delivery ratio, reduces routing overhead, enhances spectrum utilization, and increases network resilience, making it suitable for mission-critical applications such as disaster response, defense communications, vehicular networks, and mobile Internet of Things deployments. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641007061 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Driven Diagnostic Framework for Early Detection of Neurological Disorders using Multispectral Brain Imaging

(51) International classification	:G16H 50/20, A61B 5/055, A61B 5/00, G16H 50/30, G06N 20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to an AI-driven diagnostic framework for early detection and assessment of neurological disorders using multispectral brain imaging, including MRI, fMRI, and PET. The system integrates advanced artificial intelligence algorithms to automatically analyze structural, functional, and metabolic brain data, detecting subtle pathological changes, abnormal neural activity, and early biomarkers associated with neurodegenerative and neurodevelopmental disorders. The framework performs automated preprocessing, feature extraction, risk scoring, and longitudinal analysis to monitor disease progression and predict clinical outcomes. Predictive models differentiate normal age-related variations from early pathological deviations, enabling personalized treatment planning and proactive intervention. Visualization tools provide clinicians with heatmaps, functional connectivity maps, and comprehensive reports, supporting accurate and reproducible diagnosis. The modular, scalable, and accessible system enhances early detection, reduces diagnostic variability, supports longitudinal patient monitoring, and facilitates integration into hospital and research workflows, advancing precision neurology and improving patient outcomes.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641007062 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-POWERED AGRICULTURAL ROBOTICS: AUTOMATION FOR HARVESTING AND FIELD MONITORING

(51) International classification	:G05D 1/02, B25J 9/16, B25J 11/00, A01B 79/00, G05D 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an AI-powered agricultural robotics platform designed for autonomous harvesting and continuous field monitoring to improve efficiency, precision, and productivity in modern farming. The system integrates autonomous robotic units equipped with sensors, including visual, multispectral, LIDAR, soil, and environmental sensors, to assess crop maturity, detect pests and diseases, monitor soil and environmental conditions, and perform harvesting operations. AI algorithms analyze collected data to determine optimal harvesting strategies, control adaptive harvesting mechanisms, and plan autonomous navigation paths while avoiding obstacles. Machine learning models predict crop growth, estimate harvesting windows, and provide actionable insights for irrigation, fertilization, and pest management. Edge computing reduces latency and energy consumption, enabling real-time decision-making. By combining autonomous robotics, AI, predictive analytics, and precision sensing, the invention automates labor-intensive tasks, optimizes resource usage, enhances yield quality, and supports scalable, sustainable, and data-driven agricultural operations.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641007064 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN PREDICTIVE ANALYSIS FOR CARDIO-PULMONARY DISORDERS USING MACHINE LEARNING MODELS

(51) International classification	:G16H 50/30, G16H 50/20, A61B 5/00, G16H 10/60, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an AI-driven predictive system for the early detection, risk assessment, and management of cardio-pulmonary disorders. The system collects and integrates multi-modal patient data, including imaging scans, physiological signals such as ECG and SpO_2, laboratory test results, and historical medical records. The data is processed using advanced machine learning algorithms, including deep learning and ensemble models, to detect early-stage anomalies, predict disease progression, and generate personalized clinical recommendations. The system supports continuous monitoring through wearable sensors, provides predictive alerts, and delivers interpretable visualizations and risk scores to clinicians and patients. By enabling proactive diagnosis, personalized treatment planning, and continuous assessment, the invention improves diagnostic accuracy, reduces clinical workload, enhances patient outcomes, and supports data-driven management of heart and lung disorders. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026
(21) Application No.202641007066 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Smart Image Processing Method for Real-Time Face Recognition in Surveillance Systems

(51) International classification	:G06N 3/04, G06N 3/08, G06V 40/16, G06K 9/00, G06V 10/764
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The deployment of automated face recognition in real-time surveillance remains a formidable challenge due to the inherent noise of unconstrained environments. While deep learning has set new benchmarks for accuracy, the high computational demand of state-of-the-art models often precludes their use on edge-computing hardware. This paper presents an optimized, end-to-end face recognition pipeline specifically engineered for high-speed operation without sacrificing discriminative power. Our methodology integrates a multi-stage approach: smart preprocessing for illumination and noise compensation, a hybrid detection strategy combining Haar-cascades with lightweight CNN refinement, and a modified mobile-friendly CNN for feature extraction. Evaluated on the challenging QMUL-SurvFace and LFW datasets, the proposed system achieved a recognition accuracy of 93.5% in surveillance conditions and 98.2% in controlled settings. Performance analysis indicates a robust processing speed of 27-48 fps, significantly outperforming traditional methods like LBPH and heavy deep-learning architectures like MobileFaceNet in the accuracy-latency trade-off. Our results demonstrate that the system maintains high reliability (EER ≈ 3.2%) and scales efficiently up to 5,000 identities, providing a viable solution for real-world security and monitoring applications on resource-constrained devices. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3]

No. of Pages : 22 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641007075 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Lipid based Oral Nano Formulations of Antiretroviral agents

(51) International classification	:A61K 9/127, A61P 31/18, A61K 47/24, A61K 47/28, A61K 31/427
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to an oral proliposome containing antiretroviral drugs particularly Lopinavir and Ritonavir and a preparation method. Further the present invention comprises the following ingredients by shares: Lopinavir and Ritonavir, soya bean lecithin, Egg phosphatidylcholine, Phospholipon® 90H and cholesterol. The pro- liposome of the invention has the advantages of high stability, high entrapping efficiency, even grain diameters, small side effects and the like.

No. of Pages : 29 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/01/2026

(21) Application No.202641007084 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System for Enhancing Employee Engagement in Green Initiatives through Dynamic Feedback Mechanisms

(51) International classification	:G06Q 10/06, G06Q 10/10, G06N 20/00, G06N 5/04, G06Q 10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a comprehensive system designed to improve employee engagement in sustainability and environmental initiatives through dynamic feedback mechanisms. This system integrates advanced technologies, including artificial intelligence, predictive analytics, and blockchain, to foster employee participation, optimize strategies, and ensure transparency and traceability in green initiatives. The invention comprises a data collection module for gathering real-time feedback, a dynamic evaluation framework to assess engagement levels and alignment with organizational sustainability goals, and an actionable insights and reporting module for delivering targeted recommendations. A continuous application and feedback loop ensures iterative improvements in engagement strategies, adapting to evolving organizational objectives and environmental challenges. Additionally, the system leverages gamification techniques to motivate employees, promote participation, and create a culture of environmental responsibility within organizations. By providing actionable insights, fostering real-time adaptability, and enhancing transparency, the invention ensures successful implementation of sustainability programs and the achievement of both short-term and long-term environmental goals.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007100 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MACHINE LEARNING ENABLED IOT DEVICE FOR FLOOD MONITORING AND EARLY WARNING

(51) International classification	:G06N 20/00, G06Q 50/26, G08B 21/10, G06Q 10/06, G06Q 10/04	(71)**Name of Applicant :** **1)MUTHAYAMMAL ENGINEERING COLLEGE (AUTONOMOUS)** Address of Applicant :Kakkaveri (P.O), Rasipuram, Namakkal - 637408, Tamil Nadu, India Namakkal Tamil Nadu India (72)**Name of Inventor :** **1)ANAND M** **2)SUGANYA I** **3)S. SADHANA** **4)B. KABILAN** **5)SAREKA S** **6)SUBHASHRI A** **7)KAYALVIZHI K** **8)VIGNESH R** **9)MOWLESHWARAN K** **10)MURALIDHARAN P** **11)NITHEESHKUMAR B** **12)PAVIKUMAR S**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present invention discloses a machine learning enabled Internet of Things based device and system for flood monitoring and early warning. The system continuously acquires real-time hydrological and environmental data using distributed IoT sensors deployed in flood-prone regions. Machine learning models analyze historical and real-time data to predict flood occurrence, severity, and timing with improved accuracy. Based on predictive insights, the system generates early warning alerts and disseminates them through multiple communication channels to enable timely response and risk mitigation. The invention provides an adaptive, scalable, and intelligent solution for flood risk management, enhancing disaster preparedness and reducing loss of life and property.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007103 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : WEARABLE SAFETY BELT AND SHOE-INTEGRATED MULTI-TRIGGER EMERGENCY ALERT AND REAL-TIME LOCATION TRACKING SYSTEM

(51) International classification	:G08B 25/01, G08B 21/02, H04W 4/90, G08B 25/10, G08B 21/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An emergency alert and location tracking wearable system is disclosed comprising a wearable safety belt [102] having a panic button [104], a GSM module [106], a GPS module [108], one or more biometric sensors [110], a microcontroller [112], an insulated belt structure [124], and a power source [126], wherein upon receiving an emergency trigger the system transmits an emergency alert (SOS) with real-time location to predefined contacts. The emergency trigger is generated through at least one of manual actuation of the panic button [104], voice activation through a voice activation module [114] configured to detect a predefined keyword repeated a plurality of times, and a shoe-integrated device [118] comprising a foot-thumb nerve sensor [120] communicatively coupled to the belt [102] through a wireless communication module [116]. The biometric sensors [110] monitor heart rate and body temperature for distress indication, and a nearby-people evaluation module [122] performs weight and voice analysis.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007105 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A method and apparatus for early detection of road accidents using deep learning on video streams

(51) International classification	:G06K 9/00, G06N 3/04, G06N 3/08, G06K 9/62, G08G 1/017
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a method and apparatus for early detection of road accidents using deep learning on video streams. The invention provides an intelligent video analytics system capable of predicting and detecting imminent or potential road accidents by analyzing real-time or recorded video feeds obtained from traffic surveillance cameras, vehicle-mounted cameras, or other video sensing devices. The system preprocesses the captured video streams to normalize frames and enhance visual quality, followed by extraction of spatial and temporal features representing vehicle motion, trajectories, interactions, and abnormal driving behaviors. A deep learning–based prediction engine, comprising convolutional neural networks in combination with temporal learning models, processes the extracted features to compute an accident risk score indicative of a high-probability accident scenario. The risk score is evaluated against predefined or adaptive thresholds to determine the likelihood of an impending accident. Upon exceeding the threshold, the system generates early warning alerts that may be transmitted to traffic management centers, emergency response units, nearby vehicles, or authorized monitoring systems through wired or wireless communication networks.The invention enables proactive accident detection prior to or at the early stage of occurrence, thereby reducing response time, improving road safety, minimizing casualties, and enhancing traffic management efficiency. The proposed method and apparatus are scalable, adaptable to varying traffic environments, and suitable for deployment in urban roads, highways, and smart transportation infrastructures.

No. of Pages : 12 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007107 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Multi-Stream Gradient Boosting LIGHTGBM Framework for Alzheimer's Disease Diagnosis Using MRI and PET Datasets

(51) International classification	:A61B 5/055, G16H 50/20, A61B 5/00, G06T 7/00, G06N 3/04	(71)**Name of Applicant :** **1)Dayananda Sagar University** Address of Applicant :Assistant Professor Department of Computer Science and Engineering, Dayananda Sagar University Devarkagganahalli Bengaluru South District, Karnataka, India 562112 bharath-cse@dsu.edu.in Bengaluru South Karnataka India **2)Dayananda Sagar Academy of Technology and Management**
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(86) International Application No Filing Date	: :01/01/1900	**3)Lavanya K**
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(61) Patent of Addition to Application Number Filing Date	:NA :NA	**5)Prof. Gaurav Kumar** **6)Prof. Kavyashree I Pattan**
(62) Divisional to Application Number Filing Date	:NA :NA	**7)Prof. Bharath M B** **8)Prof. Mala B A**

(57) Abstract :
Alzheimer's disease is a progressive neurodegenerative disorder that requires early and reliable detection to enable timely clinical intervention. Traditional diagnostic methods often fail to identify subtle early-stage changes, creating the need for automated imaging-based solutions. Prior research indicates that MRI captures structural atrophy while PET identifies early metabolic abnormalities, and combining both modalities significantly enhances diagnostic accuracy. Building on these findings, this project aims to develop an automated system that analyzes MRI and PET scans from the ADNI-3 dataset to detect Alzheimer's disease with improved precision. The objective is to investigate multimodal feature extraction, test deep-learning–based CNN embeddings, and evaluate LIGHTGBM classification performance after fusing MRI and PET features. The methodology includes DICOM-TO NIFTI conversion, preprocessing through intensity normalization and resizing, and extraction of high-dimensional embeddings using convolutional neural networks. These fused features are then classified to determine the presence of Alzheimer's disease. A FASTAPI backend and web-based frontend are incorporated to enable user-friendly scan uploads and real-time predictions. Overall, the project seeks to assess the effectiveness of multimodal imaging and machine learning in supporting early, scalable, and efficient Alzheimer's detection.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007112 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Hybrid Analytical System for Systematic Evaluation of Machine Learning and Deep Learning Models in Gastrointestinal Disease Detection

(51) International classification	:G16H 50/20, G06N 20/00, G06N 3/08, G06N 3/04, G16H 50/70
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention presents a hybrid analytical system for systematic evaluation of Machine Learning and Deep Learning models used in gastrointestinal disease detection. The system integrates preprocessing, model execution, performance evaluation, comparative analytics, and automated reporting. It unifies ML and DL evaluation under a standardized metric-based framework. The system improves reproducibility, scalability, and clinical relevance in selecting diagnostic models. It serves as an end-to-end analytical platform for reliable GI disease detection benchmarking.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007113 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DEEPMEDSCAN: 3D CNN AND EXPLAINABLE AI-BASED MULTI- DISEASE DETECTION IN CHEST CT IMAGING

(51) International classification	:G06N 3/04, G06N 3/08, G06T 7/00, G16H 50/20, G16H 30/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a computer-implemented system and method for automated, accurate, and explainable multi-disease detection from volumetric chest computed tomography (CT) images using three-dimensional convolutional neural networks (3D-CNNs) integrated with explainable artificial intelligence (XAI). The system processes complete three-dimensional chest CT volumes to preserve spatial and anatomical relationships across adjacent slices, enabling improved identification of pulmonary diseases including pneumonia, tuberculosis, pulmonary fibrosis, lung cancer, and viral infections such as COVID-19. The invention includes automated preprocessing of CT data comprising volumetric reconstruction, normalization, noise reduction, contrast enhancement, and lung region isolation to standardize heterogeneous imaging inputs. A 3D-CNN extracts hierarchical volumetric features for multi-class disease classification and generates disease probability scores. An explainable AI module produces visual heatmaps highlighting disease-relevant anatomical regions within the CT volume, enhancing transparency and clinical interpretability of the predictions. The system functions as a clinical decision support tool deployable in hospital, cloud, or telemedicine environments, reducing radiologist workload while improving diagnostic accuracy, reliability, and early disease detection.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007115 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN INTELLIGENT COMPUTER-AIDED BREAST CANCER DETECTION SYSTEM USING DIGITAL IMAGE ANALYSIS AND MACHINE LEARNING

(51) International classification	:G06T 7/00, G06T 7/11, G06N 20/00, G06V 10/764, A61B 6/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to the development of a method where breast cancer has persisted as one of the most prevalent cause of deaths in females across the world. This serves to underscore the need for more precise and earlier diagnosis systems for breast cancer. This paper describes an Intelligent Computer-Aided Breast Cancer Detection System using digital image processing and machine learning approaches. This aims to aid doctors in more reliable decision-making for breast cancer detection. This system uses computer-aided approaches for the analysis of both mammographic and histopathological images through a set of stages: preprocessing, image segmentation, and feature extraction to determine important morphological and textural information. These are further advanced through sophisticated machine learning classifiers to detect cancer lesions from benign lesions with higher precision. This system further uses automated learning and validation to make the system more robust for various types of data. Various experiments are conducted to enhance detection accuracy and minimize false positives in comparison to earlier detection and diagnosis systems. This system aims to introduce more rapid breast cancer detection and thereby enable earlier interventions for breast cancer in healthcare practices. FIG.1

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007119 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A REGENERATIVE SCAFFOLD SYSTEM AND METHOD OF PREPARATION THEREOF

(51) International classification	:A61L 27/52, A61L 27/38, A61L 27/54, A61L 27/22, A61L 27/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a synergistic bioactive regenerative system and a non-enzymatic method for its preparation, specifically configured for the functional restoration of spinal cord injuries. The system comprises a primary bioactive matrix formed by a standardized acellular proteomic ensemble (APE) and a hydrogel carrier, integrated into a triple-layer kit with a reinforcement layer and a containment layer. The preparation method utilizes mechanical comminution and frequency-controlled acoustic liberation (30–40 kHz) to isolate the APE, which is standardized to a concentration of 400–800 μg/mL. Blending the ensemble with the carrier in a defined volumetric ratio yields a total protein load of 200–400 μg per dosage unit. The system is characterized by its ability to facilitate significant locomotor recovery, achieving a Basso, Beattie, and Bresnahan (BBB) score of at least 19 and autonomous function recovery through targeted delivery of regenerative facilitators and signalling proteins.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007120 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Impact of Advantages of Performance-Based Budgeting in Optimizing Financial Planning and Management

(51) International classification	:G06Q 40/00, G06Q 10/06, G06Q 10/00, G06Q 40/06, G06Q 40/02
(31) Priority Document No	:NA
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(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Impact of Advantages of Performance-Based Budgeting in Optimizing Financial Planning and Management The current invention pertains to a performance-based budgeting (PBB) framework that was developed with the intention of enhancing the efficiency of financial planning, resource allocation, and management in organizations. It is common for traditional budgeting systems to fail to establish a connection between the financial inputs and the actual performance outcomes because they concentrate primarily on historical expenditures and fixed allocations. A lack of accountability, ineffective decision-making, and inefficient utilization of resources are the outcomes of this situation. Through the incorporation of performance indicators, measurable objectives, and mechanisms for continuous evaluation, the performance-based budgeting model that has been proposed places an emphasis on outcome-oriented financial planning. The system improves transparency, accountability, and financial efficiency by ensuring that the allocation of budgetary resources is in line with the goals of the organization and the results that can be measured. In both public and private organizations, this approach helps to ensure that decisions are made based on accurate information and that financial management is sustainable.

No. of Pages : 12 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007122 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SOLID-STATE BATTERY ARCHITECTURE UTILIZING IMPEDANCE-TRIGGERED ACOUSTO-PLASTIC FLOW FOR CLAMP-FREE INTERFACE STABILIZATION

(51) International classification	:H01M 10/0562, H01M 10/052, H01M 10/0565, H01M 10/0525, H01M 10/42
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
SOLID-STATE BATTERY ARCHITECTURE UTILIZING IMPEDANCE-TRIGGERED ACOUSTO-PLASTIC FLOW FOR CLAMP-FREE INTERFACE STABILIZATION A lightweight solid-state battery architecture is disclosed. Conventional solid-state batteries require heavy steel clamps to force lithium into contact with the electrolyte. This invention eliminates clamps by using an integrated Acoustic Transducer (400). A Controller (500) monitors electrochemical impedance to detect contact loss. When voids form, the system triggers ultrasonic bursts that utilize acoustic yield reduction mechanisms (e.g., Blaha Effect) to momentarily soften the lithium anode. This allows the lithium to flow and heal the interface automatically, increasing energy density significantly relative to clamped systems. Ref. Fig. 1

No. of Pages : 13 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007123 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Photovoltaic-Based Landsman DC-DC Converter System for Efficient Electric Vehicle Battery Charging Application

(51) International classification	:H02M3/155, H02M3/158, B60L53/51, G05F1/67, H02J7/35
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention discloses a PV-based Landsman converter system for efficient electric vehicle battery charging. The system includes a photovoltaic array (110), a Landsman converter (120) with dual inductors (121, 122) and capacitors (123, 124), a microcontroller (130) implementing a Perturb and Observe MPPT algorithm, a driver circuit (140) amplifying gate pulses, and a MOSFET (150) regulating current to the EV battery (160). The converter provides non-inverted buck-boost operation with continuous current flow, low ripple, and minimal switching stress, enabling high conversion efficiency and stable EV battery charging using renewable solar energy.

No. of Pages : 26 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007125 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Real-Time Microbial Detection and Classification using YOLO framework

(51) International classification	:G06V 10/764, G06N 3/08, G06V 10/774, G06N 3/04, G06K 9/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention herein reveals a YOLO-based deep learning architecture for effective microbial image classification. Traditional microbial detection techniques like culture methods and manual microscopic examination are time-consuming, labor-intensive, and susceptible to human errors. Current deep learning approaches, though promising, tend to be unscalable and lack real-time capabilities. The invention overcomes the above limitations by using the YOLO algorithm, which makes a single pass over the entire images to detect, localize, and classify microbial species with high speed and precision. The architecture of the system includes data acquisition, preprocessing, YOLO-based detection, and deployment modules. Experimental results indicate that YOLO performs better than the conventional CNN and region-proposal models in accuracy, inference time, and reliability. The system is flexible for use in clinical labs, research institutions, food industries, and pharmaceutical quality control. Through the provision of real-time, scalable, and automated microbial classification, the invention greatly improves the efficiency and accuracy of microbial diagnostics and monitoring.

No. of Pages : 19 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007130 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DESIGN AND DEVELOPMENT OF NATURAL FIBRE BASED SANITARY PAD USING WET-LAID NONWOVEN FABRICATION TECHNIQUE AND A METHOD FOR MANUFACTURING THE SAME

(51) International classification	:A61F 13/15, A61L 15/60, A61F 13/472, A61L 15/28, A61F 13/53
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Sanitary pad is an important product for feminine hygiene use. It has been found that the pad produced from synthetic fibres and super absorbent polymers are commercially available and comparatively costlier one. Most of the commercially available products are not environmentally friendly. Thus, this invention focused on developing an eco-friendly sanitary pad using nonwoven fabrics made from natural fibres. The fibres of Banana, Areca, Milkweed, Cotton, and Viscose were selected based on their absorbent properties, which were confirmed through the Free Swell Absorptive Capacity Test. Taguchi's experimental design was used to optimize the blend ratio, fibre composition in each layer, and fibre weight for producing sanitary pads. The nonwoven webs were formed through a lab-scale wet-laid process. Two types of webs were made including absorbent core (Banana-Areca-Milkweed blends) retention core (Cotton-Viscose blends). Chitosan paste was used to coat the absorbent core surface for antimicrobial properties. Both the absorbent core and retention layer were produced with different weight ranges (25, 30, and 35 grams). The final sanitary pad was assembled by using the following four layers with thermal bonding or sealing viz. a PP top sheet, absorbent core, retention core, and a PE bottom sheet with wing stickers also added for easy usability. Performance of sanitary pad was analyzed by GSM, thickness, absorption time and capacity, pH level, and retention capacity. From the test results, it found that the blend of Banana, Areca, and Milkweed (45:45:10) absorbent core and Cotton-Viscose (50:50) retention layer with the fibre weight of 30 grams achieved a better outcome compared to other combinations. The results highlight the potential of using natural fibres and optimized structural design to create sustainable and high-performing sanitary products.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007139 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Analysis of Innovative Educational tools and techniques to Engage modern learners in classroom

(51) International classification	:G09B 19/00, G09B 7/00, G09B 7/02, G09B 5/14, G09B 7/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Analysis of Innovative Educational Tools and Techniques to Engage Modern Learners in the Classroom The purpose of this study is to investigate the ways in which innovative teaching methods and educational tools can be utilized to improve student engagement in contemporary classroom settings. Traditional methods of instruction that are centered on the teacher are becoming increasingly ineffective in maintaining student interest and participation as a result of rapid advancements in technology and shifting expectations of learners. Learners in the modern era prefer educational experiences that are interactive, technology-enabled, and learner-centered. The purpose of this paper is to investigate the ways in which digital tools, interactive teaching strategies, and innovative instructional techniques can be utilized to enhance classroom engagement, motivation, and learning outcomes. The approach that has been proposed places an emphasis on active learning, collaboration, and technology-assisted instruction in order to develop a learning environment that is both effective and engaging, and that serves the needs of modern students.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007148 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Intelligent Code Analysis and Vulnerability Assessment

(51) International classification	:G06F 21/57, G06F 11/36, G06F 21/56, G06F 21/55, G06F 11/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT System and Method for Intelligent Code Analysis and Vulnerability Assessment The present disclosure relates to a system and method of performing intelligent analysis of software code for the purpose of identifying vulnerabilities in computer systems. The software can be executed in a monitored environment to help determine its behaviour during execution in real time using execution-context-based fingerprints. Different indicators, such as the way software accesses memory, how it moves about between different pieces of code, and the overall activity of each instruction will all provide insight into potential security risks. When performing analysis, real time measurements are taken from various types of hardware regarding their operation; for example, measuring CPU load or assessing how quickly a memory request is responded to. Using the two types of data collected (execution-context print and hardware measurements), a correlation can be established; thereby determining the extent to which any of the hardware measurements affect how vulnerable the program is to exploitation. This methodology further allows for the identification of computer code vulnerabilities to be localised based upon the specific sequence of instructions used to execute the program; calculating the dynamic trust degradation profiles of suspected exploitation routes; and finding vulnerabilities that may not have been previously detected, without using predefined signature databases. A tamper-resistant object (PO) is created, as part of the vulnerability analysis process, in order for customers to view how their software has been corrected, after a patch to an existing program has been created. In this way, businesses can continue to provide a high level of security for their customers while still enjoying the benefits of increased reliability and improved code execution integrity.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007149 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Workflow Automation and Process Management in Computing Environments

(51) International classification	:G06F 9/48, G06F 9/50, G06F 9/46, G06Q 10/06, G06F 9/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT System and Method for Workflow Automation and Process Management in Computing Environments The present disclosure relates to a system and a method for automating computer workflows and managing processes at the hardware level through the execution of dynamically configured workflows. This system obtains real-time values of various hardware and system characteristics such as Processor Utilization, Memory Access Latency, and I/O Contentions. It also encodes tasks associated with a workflow into a dynamically configurable structure for execution. Through the computation of execution entropy Parameters, the system identifies those tasks and strategies in a Workflow that induce instability or friction at running the workflow. Additionally, through the collection of correlated telemetry data from Hardware Telemetry and Execution Entropy, the system can adaptively alter workflow execution characteristics during the execution through the re-sequencing of Workflow tasks, establishing new task execution dependencies, and maximizing parallel processing and resource allocation without interrupting execution. Finally, the method provides for the synchronization of workflow execution to the real time of all of the hardware providing feedback to the workflow and permits the persistent storage of all workflow execution states, permitting validation, rollback and fault recovery. By establishing a cyber and physical feedback process with the Workflow and its underlying computing resources, the current disclosure creates improved execution stability and reduced latency, optimized resource utilization and improved Fault Tolerance as compared with traditional static workflow automation systems.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007150 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A System and Method for Automated Software Testing and Fault Detection

(51) International classification	:G06F 11/36, G06F 9/44, G06F 11/00, G06F 11/28, G06F 9/445
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A System and Method for Automated Software Testing and Fault Detection The present invention describes a technique and device that can automatically test software and detect bugs in such a way that the techniques used to test software will rely on the characteristics of the hardware used to run the application rather than solely upon the code of the application. The system is able to gather information about the real-time "physical" actions of the software when it is running on a piece of hardware, and from this information generate a "signature" that characterizes the way that particular piece of software runs on a particular piece of hardware. In addition, the system is able to create a "digital-twin" of an executed section of code, which is constantly updated to maintain an accurate model of the control-flow, data state changes, and interactions between hardware resources for a software application at any time. The digital twin allows the system to autonomously generate new test cases for an executed section of code based on the predicted fault emergence associated with the unstable execution path of the test-case during the testing process. The physical and logical execution characteristics of a software application can then be connected to the probabilities that particular types of fault will occur before the failure has been experienced. Moreover, the information available to the system regarding the testing results for previously executed code will allow it to enhance its testing approaches autonomously. Thus, this invention will provide proactive insight into faults and improve software reliability, thus increasing the quality and all-around efficiency of testing of software in dynamic and complex environments.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007151 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Advanced Database Indexing and Query Optimization

(51) International classification	:G06F 17/30, G06F 7/00, G06F 16/2455, G06F 11/34, G06F 16/242
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT System and Method for Advanced Database Indexing and Query Optimization The present invention provides a new technique and system that allows a company to create a dynamic database indexing and optimizing method. The database execution behaviour will be adjusted to real-time hardware conditions, customer query behaviour intent, and the way in which the data may change over time due to usage patterns. The invention has a number of hardware, cognitive sensing devices that gather information on how the system is executing and behavioural query intent. Additionally, this new invention contains data entropy profiling devices (which evaluate the data's mutation characteristic) and a morphing engine to adaptively change the index topology during execution. Furthermore, the system provides for the development of a "digital twin" of a potential query's execution. There are also various mechanisms in place that will allow for the planned rewrite of the query plan in alignment with hardware execution constraints. Finally, a feedback-driven learning mechanism is used to facilitate continuous improvement in database execution optimization strategy based on past execution outcomes. Ultimately, the invention has created a measurable improvement in computational speed, memory use, predictability of query executions, and response times to queries compared with the static, cost-based approaches currently used to optimize query performances in many organizations.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007152 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Real-Time Cloud-Based Application Deployment and Scaling

(51) International classification	:G06F 9/50, H04L 29/08, H04L 12/24, G06F 8/60, G06F 9/455
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT System and Method for Real-Time Cloud-Based Application Deployment and Scaling The present disclosure relates to a system and method for real-time cloud computing application deployment and scalability model that uses hardware as a cognitive controller. The cloud computing application is deconstructed into execution graphs and execution units by a cloud system, which then monitors the real-time state of the underlying physical computing infrastructure (such as processor usage, memory latency, etc.) to create a profile of the application in the cloud environment. Based on the characteristics and types of stress being placed on each physical computing system, a cloud system not only controls the flow of results produced in one execution unit to be directly fed into the input parameters of other connected execution units, but also controls how many independent execution processes will be used at any given time based on the timing requirements of the end-user experience. This patent also describes state preserves and live migration of cloud computing applications, state-preserving deployment adjustments, state-preserving live migration of cloud computing applications, and on-the-fly adaptive binary re-binding based on target hardware characteristics. By allowing for runtime-generated execution graphs, this patent provides a predictive alternative to existing reactive resource orchestration mechanisms, and achieves a higher level of performance than existing approach, including reduced latency, increased execution stability, optimized compute resource allocation and zero downtime for deployment. In conclusion, this patent provides a technologically advanced, scalable, and industrially applicable means for the integration of heterogeneous cloud and edge computing environments.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007153 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : System and Method for Secure Authentication Using Multi-Factor Verification Protocols

(51) International classification	:H04L 9/32, H04L 29/06, G06F 21/31, H04L 9/40, G06F 21/44
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT System and Method for Secure Authentication Using Multi-Factor Verification Protocols The present disclosure describes a Secure Authentication System and Method utilizing multi-factor verification protocols to create a secure authentication platform using advanced technical methods and hardware anchoring techniques for authenticating users through multiple, dynamic factors. The authentication factors are generated in real-time using random or pseudo-random entropy retrieved from live hardware components combined with multi-dimensional, contextual characteristics to determine a risk level for authentication. In contrast to traditional authentication methods, which depend upon static credential values or a single timestamp, the system continuously monitors an 'active session' for a dynamic 'trust' score that reflects a user’s changing levels of trust throughout the session. In addition, the system performs cryptographical validations anchored to hardware for the purpose of providing a form of evidence (from an audit standpoint) of how an authenticated session is maintained and protected from replay, spoofing, or impersonation of devices. By being adaptive to risk and status variations (i.e., trust score) during a given active session, the system reduces the need for after-the-fact remediation for security risks encountered after login. The present disclosure offers tangible technical solutions for secure authentication in distributed and diverse computing environments while ensuring greater levels of security, reliability, and compliance with the latest requirements placed upon the digital infrastructure of today’s organizations.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007154 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A System and Method for Network Traffic Monitoring and Anomaly Detection

(51) International classification	:H04L 12/26, H04L 12/24, G06F 15/173, H04L 29/06, G06F 11/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Pendyala Sarvani
4)Dimili Ganga Bhavani
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(57) Abstract :
ABSTRACT A System and Method for Network Traffic Monitoring and Anomaly Detection The present disclosure relates to a system and method for "Network Traffic Monitoring And Anomaly Detection System," which will allow a customer to monitor their network traffic in real time. This system will provide a new approach to monitoring the entire network as opposed to only a few select components, which is what all existing network monitoring systems are restricted to doing. This system will offer customers several advanced detection tools, but most importantly, it will allow them to monitor all their network traffic in real time without having to open up any network packet (payload). The newly developed technology is a combined approach of several methods (i.e., entropy and timing) that when combined will allow the user to monitor real-time activity along with other metrics such as, packet content through its timestamp, and the packet's content (or payload) as well. The system will continuously evolve based on the actual network activity at any given point in time or the availability of hardware resources when monitoring the network. The same develop methodology has been applied to the attribution of detection anomalies or abnormal events, including network packet distortions, drift in entropy and timing metrics, and abnormal execution of hardware in real-time. Finally, the system offers a robust method of securing the network while optimising use of their infrastructure.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007155 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADVANCED STATISTICAL MODELS FOR PREDICTIVE ANALYSIS IN HEALTH DATA USING MACHINE LEARNING

(51) International classification	:G06N 20/00, G16H 10/60, G16H 50/20, G16H 50/70, G16H 50/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an advanced predictive analysis framework for healthcare data using statistical models integrated with machine learning techniques. The system is designed to process heterogeneous and large-scale health datasets to extract meaningful patterns, trends, and predictive indicators that support clinical decision-making and healthcare planning. By combining probabilistic and regression-based statistical methods with adaptive machine learning algorithms, the invention enables accurate and dynamic prediction of health outcomes. The framework incorporates uncertainty estimation and explainable analytics to enhance transparency and trust in predictive results. Continuous learning mechanisms allow the system to evolve with new data, ensuring relevance in changing clinical environments. The invention supports personalized healthcare by integrating patient-specific attributes and ensures secure, compliant handling of sensitive health information. This approach facilitates early diagnosis, improved treatment planning, and effective population health monitoring.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007159 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : STRESS-RESPONSIVE AUXETIC SEPARATOR SCAFFOLD FOR DENDRITE SUPPRESSION IN ALKALI-METAL BATTERIES

(51) International classification	:H01M50/40, H01M50/403, H01M50/463, H01M10/42, G01N3/08, G01N15/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
STRESS-RESPONSIVE AUXETIC SEPARATOR SCAFFOLD FOR DENDRITE SUPPRESSION IN ALKALI-METAL BATTERIES A passive safety separator for alkali-metal batteries is disclosed. The separator comprises a Polymer Scaffold (100) with a Re-entrant Honeycomb Microstructure (102) possessing a negative Poisson's ratio between -0.1 and -0.8. Unlike conventional separators that thin under stress, the invention contracts laterally when compressed by a dendrite tip (401). This triggers localized densification, raising the local shear modulus (G) above the critical suppression threshold. This "Densification-on-Demand" forces dendrites to flatten laterally ("mushrooming"), extending battery cycle life by 400%. Ref. Fig. 1

No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007160 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI Emergency Documentation and Personal Health System Using Voice-Driven Data, Smart Triage, Continuous Learning.

(51) International classification	:G16H 10/60, G16H 40/20, G10L 15/26, G16H 50/20, G06N 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A Voice-Driven and Text-Enabled AI System for Emergency Clinical Documentation, Triage, and Personal Health Monitoring provides an AI-enabled emergency healthcare system through a unified natural-language-driven platform. Continuous natural language input, including voice or typed text, from clinicians and patients is converted into structured medical data using medical speech recognition and clinical entity extraction. A stage-based AI orchestration engine performs contextual reasoning, enforces clinical safety rules, detects red-flag conditions, and computes triage scores using symptoms, vitals, comorbidities, and wearable-derived physiological data. A patient-facing module captures early symptoms and longitudinal health data, while a clinician-facing module generates triage sheets, case records, investigation summaries, treatment notes, and discharge documents in real time. Both modules operate on a unified backend to ensure seamless continuity from pre-hospital assessment to hospital-based emergency care while reducing documentation burden, enhancing accuracy, improving patient safety, and enabling longitudinal health intelligence through integrated wearable-data processing.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007161 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An AI-Driven Multimodal Sensor Fusion System for Accurate Human Activity Classification

(51) International classification	:G06N 20/00, G06K 9/62, G06N 3/08, G06N 3/04, G06K 9/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an artificial intelligence–based multimodal sensor fusion system for accurate human activity classification. The system collects data from multiple heterogeneous sensors, including wearable, ambient, and device-embedded sensors. The sensor data is preprocessed through synchronization, normalization, and noise reduction. Modality-specific artificial intelligence models extract representative features from each sensor stream. The extracted features are combined using an AI-driven fusion mechanism that learns temporal and cross-modal relationships. The fusion process dynamically adapts to sensor reliability and contextual relevance. A classification module analyzes the fused representation to identify one or more human activities. The system supports real-time operation and scalable deployment. Adaptation and personalization may be performed to improve performance over time. The invention is applicable to healthcare, smart environments, fitness monitoring, and human–computer interaction.

No. of Pages : 12 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007162 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Privacy-Preserving Face Anonymization System Using Generative Adversarial Networks

(51) International classification	:G06F 21/62, H04N 7/18, G06K 9/00, G06F 21/00, H04L 9/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT [0032] As Computer Vision technology is getting advanced day by day, users are also captivated to use every technology for their routine. Generally, we use technology for having task done in a limited and appropriate time without keeping much effort. But there is an increasing concern of privacy in the society. Its everyone's responsibility to have privacy from illegal technocrats. Usually, we use cameras or video recorders to get protected from illegal activities in public areas. It is high essential for not only get protected but also to have concern about their own privacy. In order to figure out the above concern we have proposed and developed a prototype i.e., Face Anonymization based on Generative Adversarial Networks. This keeps track of anonymized faces from original or real faces. In this invention we have defined different versions of Generative Adversarial Networks which are used to anonymize faces and also different from previous methods such as blurring, masking, etc. We have used a high-quality dataset which were aligned, scaled and centred faces. We have compared the results of each method and used evaluation of the quality.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007163 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Malware Detection and Security Assessment Using Signature-Based Analysis

(51) International classification	:G06F 21/56, H04L 29/06, G06F 12/14, G06F 11/00, G06F 21/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT [0013] Malware continues to pose a significant threat to computer systems by compromising data integrity, confidentiality, and availability. Despite the emergence of advanced detection techniques, signature-based antivirus systems remain a widely adopted and reliable approach for identifying known malware due to their accuracy and low computational overhead. This invention presents the design and implementation of a signature-based antivirus scanner aimed at effective malware detection and security analysis. The proposed system maintains a database of malware signatures and performs systematic scanning of files by comparing their patterns against known signatures. The scanner is capable of identifying malicious files with high precision while minimizing false positives. Additionally, the system provides security analysis features such as threat classification and scan reporting to assist users in understanding detected risks. Experimental evaluation demonstrates that the proposed approach efficiently detects known malware samples with minimal impact on system performance. The results indicate that signature-based scanning remains an effective solution for baseline malware protection and serves as a foundational component for layered security architectures.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007164 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Evaluation of Anti-bacterial activity of coriander Sativam and Piper betel Linn, Cuminum Cyminum with reference to Penicillin and Tetracycline

(51) International classification	:G01N 30/02, A61P 31/04, G01N 30/06, A61K 36/00, A61K 36/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT [0018] The present invention aimed at developing "Evaluation of Antibacterial Activity of Coriander sativum L, Piper Betel Linn, Cuminum cyminum Extract with reference to Penicillin and Tetracycline drugs by using Disc diffusion method. Before the extraction process, the plant parts are taken in required quantity like coriander seeds (250g), betel leaves (30.5g), cumin seeds (250g) are dried under the sunlight in shade. Extraction is done by using maceration process and Soxhlet apparatus. Extractions different compounds are carried out using different solvents like ethanol for coriander sativum, methanol for piper betel Linn, Dimethyl bromide for Cuminum cyminum. For this process different quantities of components are taken like coriander powder (250g), betel leaf powder (26.45g), cumin seeds powder (260g). In this process the coriander powder and betel leaf powder are taken into the beaker and add 150ml of ethanol and 150ml of methanol and beakers cover with aluminum Foil. [0019] Kept in a dark place for 5 days until the solvent is evaporated or sun dried. In this process the cumin seeds powder is placed in a Soxhlet apparatus. 200ml of solvent is taken for the extraction of cumin plant component. Chemical tests are done alkaloids are coriander sativum (positive) and cumin cyminum (positive). Test is done for volatile oils of coriander sativum (positive) and Cuminum cyminum (positive). Chemical test for betel leaf Dragandroff's test (positive), Hager's test (positive), saponification test (positive). In order to test the extract with components, different suitable compounds are tested by using different bacterial activity of Gram-positive and Gram-negative bacteria like E. coli, Streptococcus, Staphylococcus. Preparation of nutrient broth with Beef extract, Meat extract, NACL, Peptone, Agar-Agar, Ethanol, Methanol, Dimethyl Bromide, Distilled water etc. After the extracted plant products are tested for the antibacterial drug activity by using Autoclave and Incubator and. And preserved incubator in 5 days in order to test the zone of inhibition the culture of bacteria was streak down nutrient medium and zone of inhibition found to be coriander sativum zone of inhibition is (3.5cm), Betel Linn zone of inhibition is (4.0), cumin cyminum zone of inhibition is (2.8cm), penicillin zone of inhibition is (3.2cm), Tetracycline zone of inhibition is (2.5cm).

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007165 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Deep Learning–Driven Computer-Aided Diagnostic System for Early Skin Cancer Detection

(51) International classification	:G16H 50/20, G06N 3/08, G06N 3/04, G06T 7/00, A61B 5/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT [0021] Skin cancer is one of the major problems people face with harmful light sources such as Ultra-violet (UV), infrared radiation (IR). It is very important to identify the type of skin cancer to save people. However, doing this by hand is a daunting task. It is very tedious for doctors and therefore relies on Computer-Aided Diagnostic (CAD) tools. We have developed a deep learning solution that can identify the type of Skin-lesion images. We used Convolutional neural network models using Transfer learning. The proposed solution to obtain the best accuracy of various pre-trained image classification models such as VGG-16, Inception V3 and Inception ResNetV2 can provide standard predictions for test samples. Our models offer best test data performance with 78.79%, 80.15% and 83.18% accuracies of VGG 16, Inception V3 and Inception ResNetV2.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007173 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATIC FLOOD PREDICTION AND DRAINAGE CONTROL SYSTEM.

(51) International classification	:G06Q 50/26, G06Q 10/06, G06Q 10/04, G01W 1/10, G08B 21/10
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. B. JANARDHANA RAO

(57) Abstract :
The current invention pertains to an automated flood prediction and drainage control system aimed at alleviating urban and semi-urban floods by real-time monitoring, forecasting, and automated intervention. The system incorporates various environmental sensors, including as rainfall, water-level, flow-rate, and soil moisture sensors, to continually collect hydrological data from flood-prone regions. The acquired data undergoes signal conditioning and predictive analysis to produce a flood risk index that signifies the probability of flooding before it transpires. In response to anticipated flood conditions, the system automatically manages drainage infrastructure, including pumps, gates, and valves, to reduce surplus water flow. A wireless communication module conveys real-time data and notifications to remote monitoring systems for supervisory control. The suggested innovation facilitates proactive flood management, diminishes reliance on manual intervention, and mitigates damage to life and property, rendering it appropriate for smart city and disaster management applications.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007175 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Real-Time Fall and Activity Detection Using AI-Enabled IoT Devices.

(51) International classification	:A61B 5/11, A61B 5/00, G16H 40/67, G06N 5/04, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Malleswari Akurati

(57) Abstract :
The present invention provides an AI-enabled IoT device-based real time general designated medical monitoring tool for the continuous monitoring of patients. Wearable sensors (such as smart watches, fitness trackers, etc.) will collect human movement data that will be locally processed by an "edge" computing unit that will have the ability to classify the user's daily activities and detect if a fall occurred with minimal latency. An AI-based inference engine and a method to temporally validate the results both help to improve the accuracy of our detection as well as minimize false positives by evaluating a multitude of factors. When the presence of a fall is confirmed, the device is able to send a real time alert to the caregiver or emergency medical services using a wireless communication medium.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007180 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : TAIL CURRENT BIASED SENSE AMPLIFIER DESIGN FOR HIGH SPEED MEMORY STORAGE APPLICATIONS.

(51) International classification	:G11C 7/06, G11C 11/419, G11C 11/412, G06F 17/50, G11C 16/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
1)Racha Ganesh
2)Rishika Viswanath Bairoju

(57) Abstract :
The portable, high-speed, and low-power data computations require fast memory access to retrieve a large amount of data. This process requires the design of a sophisticated memory unit, which will help in accessing the data at a faster rate. The memory data is accessed by using either voltage or current sensing amplification. The current sensing is preferable at lower technology nodes of semiconductors with greater strength of logic level values. This approach provides an integrated design of a current mirror and NMOS tail-based sense amplifier suitable for SRAM memory cell data retrieval. The design works with current mirroring and amplification for reading logic-1, and NMOS tail circuitry with single or multiple transistors for reading logic-0. The results show that the design can be used for reading good logic-1 and logic-0 values with a faster data rate.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007182 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : FPGA-Based Intelligent Mobility Nexus: Real-Time Smart Parking and Adaptive Wireless EV Charging System for Sustainable Campus Connectivity

(51) International classification	:B60L 53/12, B60L 11/18, B60L 53/38, G08G 1/14, H02J 50/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. P. PATTUNNARAJAM
3)2. Ms.B.ELAKKIYA
(72)**Name of Inventor :**
1)Dr. P. PATTUNNARAJAM
2)2. Ms.B.ELAKKIYA

(57) Abstract :
An intelligent system for automatic parking control and flexible wireless charging for electric vehicles is disclosed. The system employs distributed sensors to monitor real-time parking occupancy and vehicle presence. An FPGA-based control unit executes multiple parallel finite state machines to perform vehicle identification, dynamic parking-slot allocation, navigation guidance, and safety monitoring. For electric vehicles, an adaptive wireless charging module based on magnetic resonance dynamically selects an optimally aligned transmitter coil to maximize power-transfer efficiency and reduce energy loss. A cloud-based interface provides real-time parking availability, charging status, energy usage, and system monitoring. The proposed system enables efficient parking management, optimized wireless charging, and scalable smart mobility infrastructure, contributing to Sustainable Development Goals SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure), SDG 11 (Sustainable Cities

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007183 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HIGH EFFICIENT FLEXIBLE PAPER BATTERY FOR ULTRAFAST RECHARGING BATTERY

(51) International classification	:H01M 10/0525, H01M 10/04, H01M 10/0585, H01M 4/66, H01M 10/052
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Mrs. Yerramsetty Pavani
5)Dr. P. Himakar
6)Dr. Shruthi D L
7)Dr. V. Swarnalatha
8)Dr. Abu Rashid
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4)Mrs. Yerramsetty Pavani
5)Dr. P. Himakar
6)Dr. Shruthi D L
7)Dr. V. Swarnalatha
8)Dr. Abu Rashid

(57) Abstract :
The present invention relates to a high-efficiency flexible paper battery designed for ultrafast recharging and sustainable energy storage applications. The proposed battery utilizes a cellulose-based paper substrate that serves as both a mechanical support and a functional electrochemical framework, enabling lightweight, bendable, and foldable battery configurations. Conductive materials and electrochemically active electrodes are integrated within the paper matrix to create continuous electron pathways and enhanced ion transport networks, thereby reducing internal resistance and supporting rapid charge–discharge cycles. The porous and fibrous nature of the paper substrate allows efficient electrolyte absorption, improved thermal dissipation, and stable performance under mechanical deformation. The battery is capable of safe operation, high energy efficiency, and long cycle life even under high charging currents. The invention emphasizes eco-friendly materials and scalable manufacturing processes, making it suitable for wearable electronics, disposable devices, IoT systems, and flexible energy storage applications.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007184 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ROLE OF ALTERNATIVE DISPUTE RESOLUTION (ADR) IN RESOLVING HEALTH INSURANCE CONTRACT DISPUTES IN INDIA

(51) International classification	:G06Q 50/18, G06Q 40/08, G06Q 10/10, G06Q 40/00, G06Q 10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Mr. M. Dhinesh
4)Mano Ranjith. A
5)S. Siddarthan
6)Charan N
7)Kaushik Kanna A.P
8)S. Sakthivel
9)Gowtham Adithya V
10)K. Yeshwanthkumar
11)Lakshita S P
12)Prakash raj S
13)Aniruddh Gokul
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11)Lakshita S P
12)Prakash raj S
13)Aniruddh Gokul

(57) Abstract :
The present invention provides a structured method and system for resolving health insurance contract disputes in India using Alternative Dispute Resolution (ADR) mechanisms, including mediation, conciliation, and arbitration. The method includes submission of disputes by policyholders through digital platforms, mobile applications, or physical offices, categorization of disputes based on claim type, urgency, policy terms, and historical data, and selection of the most appropriate ADR mechanism. The system facilitates mediation and conciliation via neutral third-party facilitators, and arbitration through legally binding decisions enforceable under Indian law. Confidentiality and security of sensitive health and financial information are ensured through encryption and access control protocols. The invention integrates monitoring, tracking, and reporting of dispute outcomes, feedback mechanisms, and hybrid digital-offline participation. By reducing reliance on traditional litigation, improving efficiency, and promoting fair, timely, and enforceable settlements, the invention enhances stakeholder satisfaction and regulatory compliance in the health insurance sector.

No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007185 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR ZERO-WASTE CASCADE PROCESSING OF MONKEY POD PULP INTO BIOETHANOL, BIO-BASED ADHESIVE AND CONSTRUCTION BINDER

(51) International classification	:C12P 7/10, C12P 7/06, B09B 3/00, C10L 5/44, C12P 7/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Thejas Urs G
2)Dr. Lakshmi P. S
3)Dr. Charan Kumar H.C

(57) Abstract :
The present invention relates to a zero-waste cascade processing method and system for valorising monkey pod (Samanea saman) pulp into three product streams: fuel-grade bioethanol, bio-based adhesive and mineral–biochar construction binder. Fresh or dried pulp is mechanically size-reduced, hydrothermally or chemically pretreated and enzymatically hydrolysed to release fermentable sugars. The sugar liquor is fermented with ethanol-producing microorganisms, followed by distillation and dehydration to obtain bioethanol, while process water and CO_2 are recovered. The solid–liquid residue, enriched in lignin, tannins and fibres, is fractionated into colloidal organic phase for adhesive formulation and fibrous/ash fraction combined with lime or supplementary cementitious materials to form a hydraulic construction binder. Internal recycle of process liquors, heat integration and controlled emissions yield near zero solid and liquid waste. The integrated platform upgrades low-value agro-residue into fuels and materials, reducing dependence on petrochemical adhesives and high-clinker cements and lowering greenhouse gas emissions from construction.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007191 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Smart Classroom Attendance System using IoT with Biometric Authentication and Classroom-level Geofencing.

(51) International classification	:G06Q 50/20, H04W 4/021, G07C 1/10, H04L 29/06, G06K 9/00	(71)**Name of Applicant :** **1)CVR COLLEGE OF ENGINEERING** Address of Applicant :CVR COLLEGE OF ENGINEERING, Vastunagar, Mangalpalli (V), Ibrahimpatnam (M), Rangareddy (Dist), Telangana 501510, India. Hyderabad Telangana India (72)**Name of Inventor :** **1)Dr. Bipin Bihari Jayasingh**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
A Smart Classroom Attendance System automates the process of recording the student attendance by integrating biometric devices with classroom level geofencing and IoT connectivity. To validate the student identity, the system employs multiple biometric methods at the entrance of the classroom. The virtual perimeter is created using geofencing with IoT to verify the identity and record the attendance when the student is present in the geofence area that avoids the proxy attendance. Biometric terminals are connected to edge gateway to process the authentication data locally while minimizing the latency and enabling real time attendance tracking. The processed data is sent to secure cloud server subsequently through Wi-Fi for storage and accessible to the administrative personnel. The cloud based dashboard is available for immediate access to the attendance information. This innovation is above the conventional attendance monitoring systems though it combines cloud server, IoT, geofencing and biometric methods.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007195 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD OF RATION DISTRIBUTION

(51) International classification	:G06Q 20/40, G06Q 20/20, G06K 9/00, G06Q 10/08, G06Q 20/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)E.BALRAJ
2)P.MANIKANDAN
3)K.DEVI

(57) Abstract :
Embodiments of the present disclosure relate to a system (100) and a method (300) of ration distribution. The system (100) operates as an automated ration distribution platform enabling secure identity verification and precise commodity dispensing. The system (100) coordinates biometric acquisition, entitlement processing, dispensing control, and data synchronization. A fingerprint scanner (104), an iris scanner (106), and a facial recognition unit (108) acquire biometric data for beneficiary authentication using sequential validation logic. A display unit (110) presents transaction prompts, quota details, and confirmation messages, while an audio output unit (112) delivers multilingual guidance and alerts. Upon successful authentication, the system (100) retrieves entitlement data through a cloud server interface (120). Authorized dispensing commands activate an electromechanical dispensing unit (116) and one or more solenoid valves (118) to release ration commodities. A load cell sensor (114) measures dispensed quantities in real time, enabling accurate delivery and verification.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202641007196 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PORTABLE DEVICE FOR AUDIO PROCESSING WITH LEDGER INTERFACE

(51) International classification	:G10L 15/26, G10L 15/22, G10L 15/00, H04R 3/00, G06F 17/28
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)EMIR HUSAIN
2)DAISY GOHAIN

(57) Abstract :
The present disclosure provides a portable device (100) for audio processing and a method (200) for capturing and processing audio. The device (100) includes a housing (102) containing a microphone array (104) with two MEMS microphones (104-2) and noise cancellation circuitry (104-4), a processor (108) with system-on-chip (110) executing audio-to-text conversion, dialect recognition, translation, and semantic tagging, a memory (112) storing dialect models, a ledger interface (114) generating hashes associated with timestamp (114-4) and device identifier (114-6), a photovoltaic panel (106) harvesting energy, and a wireless interface (116) transmitting translated text and hashes. Unlike conventional portable recording devices requiring cloud connectivity for processing and lacking data integrity verification, this device implements hardware-integrated audio processing through dedicated system-on-chip architecture with cryptographic hash generation and ledger-based provenance tracking, enabling reliable field documentation with self-sustaining photovoltaic power supply without network dependency.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007200 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ANIMATRONIC HAND CONTROL SYSTEM AND METHOD THEREOF

(51) International classification	:G06F 3/01, B25J 9/16, B25J 13/08, G06K 9/00, G06F 3/0346
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)SAKTHIVEL V
2)ANURAG KUMAR KANOJIYA
3)PRAKASH P

(57) Abstract :
A system (100) for controlling an animatronic hand (102) capable of accurately replicating human hand gestures (106) in real time may include an image capture unit (104) to capture image data representing hand gestures (106) of a user (108) and an executable connection management module (110). The executable connection management module (110) may process the captured image data, via a gesture recognition executable module, to determine finger movement parameters. The determined parameters may be encoded, via a message generation executable module, into standardized control messages and published within a robotic communication framework. The animatronic hand (102) includes multiple finger members (126) actuated by a plurality of servo motors (110), and a controller (120) to receive the control messages, translate them into servo motor control signals to actuate the servo motors (118), and publish feedback indicative of current servo motor positions to enable closed-loop gesture replication with improved accuracy and responsiveness.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007206 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN ELECTRIC FAN EMPLOYING PIEZOELECTRIC VIBRATION FOR AUTOMATIC SELF-CLEANING OF FAN BLADES

(51) International classification	:F04D 25/08, F04D 29/70, F04D 27/00, H02N 2/18, F04D 25/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)DAISY GOHAIN
2)EMIR HUSAIN

(57) Abstract :
An electric fan 100 for auto-cleaning of fan blades 104 includes a rotating blade assembly includes two or more blades 104; a piezoelectric transducer 202 mechanically coupled at root of blade assembly; and a controller 204 including a driver IC and power transfer interface. The controller 204 is programmed for multi-mode bursts combining a low-frequency flexural pulse followed by ultrasonic bursts of predefined time of burst and frequency to dislodge both coarse and fine dust particulates from each blade 104 to clean the blades 104. The fan 100 allow remote configuration for scheduled cleaning via cloud scheduler, firmware updates, and status reporting.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007224 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Cognitive Artificial Intelligence System for providing Personalized Virtual Assistance in Health Care.

(51) International classification	:G16H 50/20, G16H 50/30, G16H 20/70, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Sri Laxmi Kuna
2)Archana Nagelli

(57) Abstract :
The present invention related to cognitive artificial intelligence system for providing personalized virtual assistance in healthcare, comprises a multimodal data acquisition module which is designed to acquire patient related physiological, behavioral and contextual data and a cognitive learning engine which interprets the data with the help of adaptive deep neural networks and reinforcement learning algorithms to draw patient specific health information. It has a personalized recommendation module that is used to produce individual guidance, therapeutic recommendations and preventive recommendations, and a dynamic emotional recognition unit that identifies emotional tone in real time, stress and cognitive state. A contextual response generator builds contextual-based and human-like conversations using natural language processing and a secure healthcare communicator interface allows interaction with caregivers and medical professionals safely.

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007225 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Artificial Intelligence Maturity Model (AIMM) and Its Multi-Domain Applied Frameworks

(51) International classification	:G06N 3/08, G06N 3/04, G06Q 10/06, G16H 40/20, G06N 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)SATHYANARAYANAN RAMAN

(57) Abstract :
The invention discloses a universal, layered Artificial Intelligence Maturity Model (AIMM-XX) that governs the design, deployment, and governance of AI systems through seven structured layers (L0–L6) encompassing data, workflow, model, runtime, optimization, and governance operations. Each layer incorporates measurable maturity checkpoints ensuring transparency, traceability, and ethical compliance in AI development. The AIMM-XX architecture is modular and extensible, enabling the creation of domainspecific applied frameworks such as AIMM-MS for Materials Science, AIMM-MF for Manufacturing, AIMM-HC for Healthcare, and AIMM-HS for Hospitality. These Applied AIMM Frameworks provide contextualized standards and KPIs for each sector while maintaining interoperability and auditability across the unified AIMM-XX structure. Additionally, AIMM-XX supports neural and cognitive applications under AIMM-NL, which integrates Brain-Computer Interface (BCI) paradigms including Steady-State Visual Evoked Potentials (SSVEP), Motor Imagery (MI), P300, Event-Related Potentials (ERP), and hybrid BCI architectures. The invention thereby establishes a cross-domain maturity and governance ecosystem that supports benchmarking, certification, and continuous improvement of AI readiness and reliability across diverse industries and research domains

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007229 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN IRRIGATION PIPE CONNECTOR ASSEMBLY

(51) International classification	:F16L 41/02, F16L 41/03, A01G 25/02, A01G 25/06, F16L 41/08	(71)**Name of Applicant :** **1)RAJGOPAL G.** Address of Applicant :NO. 484, 1ST MAIN, 3RD CROSS, MAGADI MAIN ROAD, SYNDICATE BANK LAYOUT, VISHWANEEDAM, BENGALURU-560091, KARNATAKA BENGALURU Karnataka India (72)**Name of Inventor :** **1)RAJGOPAL G.**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
AN IRRIGATION PIPE CONNECTOR ASSEMBLY An irrigation pipe connector assembly, comprising a body, two connecting parts with inlets and one or more outlets. Said body having a hollow opening across at an inner surface across two ends. Two connecting part with inlets being provided at both ends of the body to connect main water pipe. A single way, two way or three way outlets are centrally provided either adjacently or in opposite direction on an outer surface of the body. Said outlets are protruded from the outer surface of the body to connect one or more irrigation pipe. An outer surface of the outlets having a zig-zag structure with a locking point at an end for snugly locking the connected irrigation pipe and wherein, the locking point is twisted upwardly with small hooks are provided around at the outlet connected part of the body of the pipe connector assembly to automate the locking of irrigation pipe, when inserted into the said outlets.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007234 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Cross-Backbone Knowledge Harmonization Framework for Automated Pigeon Pea Leaf Disease Classification

(51) International classification	:G06V 10/764, G06K 9/62, G06V 10/774, G06T 7/00, G06N 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
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(57) Abstract :
The current invention is a cross-backbone knowledge harmonization system that is used to classify pigeon pea leaf disease automatically. The framework combines complementary visual representations acquired through various backbone models to produce a single and discriminative feature space to identify the disease. The invention enhances the accuracy of classification, its strength, and generalization of the classification with varying environmental and imaging conditions by balancing the specific knowledge of the backbone instead of depending on a single representation. The system consists of image acquisition, preprocessing, backbone feature extraction, knowledge harmonization, and classification modules, which allow the system to be scaled to agricultural diagnostic environments. The flexible and streamlined architecture facilitates real time as well as offline functionality and minimizes the computational load. Its invention will offer a solid and feasible means of identifying plant diseases automatically, which will assist in precision agriculture and sustainable crop management.

No. of Pages : 16 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007262 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DUAL-ZONE THERMOELECTRIC FOOD STORAGE APPARATUS FOR SIMULTANEOUS HEATING AND COOLING

(51) International classification	:F25B 21/02, F25D 11/00, F25B 21/04, F25D 23/12, F25D 17/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT DUAL-ZONE THERMOELECTRIC FOOD STORAGE APPARATUS FOR SIMULTANEOUS HEATING AND COOLING The present invention relates to a dual-zone thermoelectric food storage apparatus (100) capable of maintaining simultaneous heating and cooling within a single integrated enclosure. The apparatus comprises an upper heating chamber (1) and a lower cooling chamber (14) separated by a central thermoelectric partition assembly having a thermoelectric module (11) positioned between an upper heat sink (10) and a lower heat sink (12). Independent air-circulation systems employing inlet fans (13), exhaust fans (3), and axial fans (3) regulate airflow in each chamber. An electronic control unit located in a rear insulated compartment (18) incorporates temperature sensors and a microcontroller-based feedback circuit using pulse-width modulation (PWM) to maintain independent temperature set-points. A digital display (8) indicates real-time operation. The invention provides an energy-efficient, refrigerant-free, and compact system for domestic, commercial, and mobile food preservation applications. Fig.1

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007267 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A LIQUID FERTILIZER WITH CARBON-COMPLEXED/CHELATED NUTRIENTS AND ITS METHOD OF PREPARATION THEREOF

(51) International classification	:C05D 9/02, C05G 1/00, C05G 3/00, C05F 11/00, C05F 11/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT “A LIQUID FERTILIZER WITH CARBON-COMPLEXED/CHELATED NUTRIENTS AND ITS METHOD OF PREPARATION THEREOF” A method (100) for preparation of a liquid fertilizer with carbon-complexed/chelated nutrients. The method comprises charging (102) a first reactor (202) with liquid and solid raw materials (201A, 201B) in water to form a suspension and heating to solubilize the nutrients, into ionic forms, allowing (104) the solution to cool in a second mixture reactor (204), and adding carbon source to form a mixture homogenizing (106) the mixture in homogenizer or colloid mill (206), transferring (108) the mixture into a third reactor (208) to form final products, cooling and storing (110) the final products in storage tanks (210) or drying the final products, packaging (112) the dried products in moisture-proof bags and liquid products in containers. [Figure 1]

No. of Pages : 37 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007270 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENERGY-EFFICIENT WAKE-UP RECEIVER SYSTEM FOR AN INTERNET OF THINGS (IOT) END NODE

(51) International classification	:H04W 52/02, H04B 1/16, H04W 84/18, H04L 29/12, H04L 12/28
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to an energy-efficient wake-up receiver system (100) for an Internet of Things (IoT) end node. The system includes ultra-low-power wake-up receiver module (102) that continuously monitors wireless communication channel while consuming substantially less power than a primary radio transceiver (104-2), allowing a main processing and communication subsystem (104) to remain in a low-power sleep state. The wake-up receiver module (102) includes antenna (102-1), matching network (102-2), signal detection path including envelope detector (102-3), filter (102-4), and amplifier chain (102-5), signal decoder and pattern detector (102-6) for extracting device-specific address, address matching circuit (102-7), and authentication module (102-8) for validating embedded authentication token. A wake-up control interface, implemented by wake-up interrupt generator (102-11), issues wake-up interrupt only upon successful address and authentication validation, thereby activating microcontroller unit (104-1) and primary radio transceiver (104-2). This architecture decouples continuous listening from high-power communication, reducing idle energy consumption.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007271 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ARTIFICIAL INTELLIGENCE (AI)-ENABLED SMART FERTILIZER CONTROL SYSTEM AND METHOD FOR ADAPTIVE NUTRIENT DELIVERY IN SOIL

(51) International classification	:A01C 21/00, A01C 23/04, A01C 23/00, A01B 79/00, A01G 9/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to an artificial-intelligence-enabled fertilizer control system. The system (100) includes processor (202) and memory (204) communicatively coupled to processor (202) and storing executable instructions. Upon execution, processor (202) receives soil parameter data indicative of soil moisture, soil pH, soil temperature, and nutrient concentration, and compares received soil parameter data with predetermined crop-specific nutrient reference profiles or nutrient threshold values stored in memory (204). Based on comparison, processor (202) determines nutrient release profile defining nutrient type, nutrient release rate, and nutrient release timing required to meet crop nutrient demand. The processor (202) generates control signals to actuate a nutrient release mechanism (114) for regulating nutrient diffusion into surrounding soil and iteratively updates the nutrient release profile in a closed-loop manner using subsequently received soil parameter data and historical nutrient response data. The system (100) thereby enables autonomous and adaptive nutrient regulation responsive to real-time soil conditions.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007272 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED BIOMEDICAL WASTE SEGREGATION WITH INTEGRATED CLASSIFICATION AND DISPENSING

(51) International classification	:B65F 1/14, B07C 5/342, B65F 1/00, B65F 1/16, B07C 5/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)MURALI, Ritwik

(57) Abstract :
The present disclosure provides a system (100) for segregation of biomedical waste and a method (300) for automated classification and dispensing of waste items. The system (100) includes a bin body (102) with multiple sub-bins (126) arranged around a central axis (114), a camera (104) with an embedded classification model (104-4) for generation of classification output (106), at least one first motor (108) for rotation of the central axis (114), at least one second motor (112) for operation of a flap (118), and a controller (110) for coordination of classification and dispensing operations. Unlike conventional waste segregation systems that rely on cloud-based processing or manual intervention, the present disclosure achieves real-time on-device classification without transmission delays while ensuring automated dispensing into color-coded sub-bins (126) and minimizing direct human contact with hazardous biomedical materials.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007273 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE COCONUT DE-HUSKING SYSTEM WITH CAMERA-WEIGHT INTEGRATED MOTOR CONTROL

(51) International classification	:A23N 5/03, A23N 5/08, B02B 3/04, B02B 7/00, B07C 5/36
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
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(57) Abstract :
The present disclosure provides a coconut de-husking system (100) for adaptive husk removal including a weighing station (104) with a load cell (104-2), an imaging station (106) with a camera (106-2), a control unit (112) receiving weight data (108) and image data (110) to generate a motor control signal (114), a Variable Frequency Drive (116) generating a frequency output (118), a three-phase asynchronous motor (120), and a mechanical de-husking assembly (122) with a roller mechanism (122-8). The control unit (112) classifies the coconut (102) into maturity class (210) including Class A (210-2), Class B (210-4), and Class C (210-6) based on extracted features for speed mapping (212). Unlike conventional fixed-speed de-husking systems achieving 56% success rate with 38% shell damage, this adaptive configuration achieves 82% successful de-husking with 10% shell damage through dynamic rotational speed adjustment within a range of 500 RPM to 1390 RPM based on individual coconut characteristics.

No. of Pages : 33 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007279 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATED DIAGNOSIS OF RESPIRATORY DISEASES FROM MEDICAL IMAGING USING DEEP LEARNING

(51) International classification	:G16H 50/20, A61B 6/00, A61B 6/03, G16H 30/40, G06N 3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Respiratory diseases represent a significant global health burden and are projected to become one of the leading causes of mortality by 2030. In recent years, artificial intelligence (AI) has gained substantial attention across scientific disciplines, particularly in the medical domain for disease diagnosis and progression assessment. AI-driven machine learning (ML) and deep learning (DL) techniques have emerged as powerful tools for the automated diagnosis of respiratory diseases using medical imaging such as chest radiographs and computed tomography scans. These algorithms enable accurate classification of conditions including pneumonia, tuberculosis, lung cancer, emphysema, asthma, and pulmonary fibrosis by learning complex patterns from large datasets. AI-assisted diagnostic systems enhance precision and support clinicians in distinguishing diseases with overlapping clinical and radiological features. This review highlights recent advancements in AI-based diagnostic approaches for three major respiratory conditions chronic obstructive pulmonary disease (COPD), asthma, and pulmonary fibrosis. The integration of AI into clinical workflows is expected to improve early diagnosis, disease management, and patient outcomes, establishing AI as a valuable adjunct in routine respiratory care.
No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007281 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : GAMIFIED ENGLISH LANGUAGE LEARNING SYSTEM FOR HIGHER EDUCATION

(51) International classification	:G09B 19/06, G09B 5/06, G06Q 50/20, G09B 5/04, G09B 7/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Digital gamification has emerged as an effective pedagogical strategy for enhancing English language learning by bridging the gap between learner engagement and instructional practice. This systematic review synthesizes empirical research on the application of gamification in digital English learning environments within higher education. A total of eighteen peer-reviewed studies published between 2014 and March 2021 were analyzed to examine gamification designs, learning experiences, and educational outcomes among university-level English as a Foreign Language (EFL) learners. The findings consistently indicate that gamified learning environments positively influence motivation, engagement, enjoyment, satisfaction, and learner autonomy. Gamification elements such as feedback, points, badges, leaderboards, challenges, and levels were most frequently employed to support vocabulary acquisition, grammar learning, reading, writing, listening, and speaking skills. The review further identifies methodological trends, technological platforms, and research gaps, and provides design-oriented recommendations for implementing effective digital gamification strategies to enhance English language learning outcomes in higher education contexts.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007286 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AUTOMATIC SOLAR-BASED WIRELESS ELECTRIC VEHICLE (EV) CHARGING SYSTEM

(51) International classification	:B60L53/51, H02J7/35, B60L53/12, H02J50/10, H04W4/80
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Electric Vehicle (EV) charging infrastructure is essential for promoting the transition to sustainable transportation. The Solar-Powered Wireless EV Charging System presents noteworthy improvements by integrating solar energy, wireless power transmission, hybrid support, and smart automation to improve charging dependability, effectiveness, and user satisfaction. This summary outlines the latest advancements in solar-powered wireless electric vehicle charging technology. Recent advancements in this area have concentrated on enhancing energy management via solar-grid hybrid systems, guaranteeing secure access through RFID-based authentication, and improving charging flexibility with smart wireless charging pads. Elements like mobile alerts and automatic charging start enhance convenience and system reactivity even more. Furthermore, advancements focus on inhibiting unauthorized entry, enhancing energy efficiency, and reinforcing safety during the charging procedure. Solar-powered wireless EV charging technology is advancing, enhancing levels of sustainability, efficiency, and user convenience while fulfilling energy regulations and environmental standards. These innovations guarantee that EV charging stays convenient, environmentally friendly, and prepared for the swiftly evolving electric mobility landscape.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007296 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DECISION-SUPPORT SYSTEM FOR BREAST CANCER PROGNOSIS USING WPOI AND HISTOPATHOLOGICAL MARKERS

(51) International classification	:G16H 50/20, G16H 50/30, G06F 19/00, G06T 7/00, G16H 10/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
TITLE: DECISION-SUPPORT SYSTEM FOR BREAST CANCER PROGNOSIS USING WPOI AND HISTOPATHOLOGICAL MARKERS The present invention proposes a prognostic decision-support system for breast carcinoma that objectively stratifies patients based on recurrence risk. The system automatically extracts histopathological data from surgically excised tumour specimens, including worst pattern of invasion (WPOI), lymphovascular invasion, tumour budding, tumour-infiltrating lymphocytes, lymph node stage, and tumour size. A scoring engine assigns predefined numerical weights to these parameters, generating a composite prognostic score, which is further classified into low, intermediate, or high recurrence risk categories. Results are displayed through a color-coded interface, along with clinical recommendations. It enables prediction of recurrence risk directly from histopathological data without manual score entry. Evaluation of 56 invasive ductal carcinoma cases demonstrated significant associations between higher WPOI grades and aggressive tumour features such as lymphovascular invasion, high tumour budding, larger size, advanced stage, and lower immune response. The system provides an objective, reproducible tool for risk assessment, aiding personalized treatment planning and improving prognostic accuracy in breast carcinoma.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007297 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EXTRACELLULAR MATRIX–BASED CYTOLOGICAL SCORING SYSTEM FOR SALIVARY GLAND FNAC

(51) International classification	:G01N 33/574, G01N 33/50, G01N 33/48, G01N 33/68, G01N 33/49
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: TITLE: EXTRACELLULAR MATRIX–BASED CYTOLOGICAL SCORING SYSTEM FOR SALIVARY GLAND FNAC A cytopathology-based diagnostic scoring system for evaluating salivary gland fine needle aspiration cytology (FNAC) specimens has been proposed in the present invention. The system comprises three modules: (a) an extracellular matrix (ECM) assessment module that analyzes ECM patterns and assigns a quantitative ECM score (0–10) reflecting malignant potential as shown in figure-1; (b) a background composition assessment module that evaluates smear background features such as proteinaceous, cystic, hemorrhagic, mucinous, inflammatory, or necrotic material and assigns a quantitative background score (0–10); and (c) a cellular architecture assessment module that assesses cellular distribution, clustering, and morphology to assign an architectural score (0–10). A score aggregation and interpretation module sums the three scores to generate a total diagnostic score (0–30) and stratifies specimens into predefined diagnostic categories: benign, neoplastic, suspicious for malignancy, and malignant. The system enables reproducible, objective, and standardized malignancy risk stratification and can be implemented manually, via printed scoring cards.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007299 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : HUMAN ACTIVITY RECOGNITION FROM MULTI-SENSOR DATA VIA UNIFIED FEATURE ENGINEERING AND OPTIMIZED DEEP LEARNING

(51) International classification	:G06N 3/08, G06N 3/04, G06K 9/62, G06K 9/00, G06V 40/20
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(32) Priority Date	:NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A system and method for Human Activity Recognition (HAR) using multi-sensor wearable data is disclosed. The invention addresses challenges arising from sensor noise, missing data, high dimensionality, and class imbalance that limit the practical deployment of existing deep learning-based HAR systems. The proposed framework integrates composite feature engineering with mutual information-based feature selection and a computationally efficient, optimized Multi-Layer Perceptron (MLP). Composite features, including mean body temperature and acceleration magnitude, are generated to enhance discriminative capability while reducing redundancy. Informative features are selected using mutual information to eliminate irrelevant signals and improve robustness. The selected features are classified using an MLP employing Swish activation, batch normalization, dropout, and label smoothing to enhance generalization under noisy and imbalanced conditions. Experimental validation demonstrates an activity recognition accuracy exceeding 98%, with significantly reduced computational complexity compared to convolutional and recurrent neural networks. The invention is scalable, interpretable, and suitable for real-time deployment on wearable, embedded, and IoT-based healthcare systems.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007301 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : NON-CONTACT CIRCADIAN-SYNCHRONIZED ACOUSTIC SYSTEM FOR PASSIVE MUSCULOSKELETAL RELAXATION DURING SLEEP

(51) International classification	:A61M 21/02, A61M 21/00, A61N 7/00, A61H 23/02, G10K 11/178
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
NON-CONTACT CIRCADIAN-SYNCHRONIZED ACOUSTIC SYSTEM FOR PASSIVE MUSCULOSKELETAL RELAXATION DURING SLEEP The present invention discloses a "Silent Night-Recovery" system for reducing perceived morning stiffness. Utilizing an air-coupled Ultrasonic Phased Array (100) operating at 40-200 kHz, the system delivers sub-perceptual Acoustic Radiation Force to the user's spine during sleep. The acoustic intensity is modulated by a Circadian Algorithm (peaking pre-dawn) and Gated by Respiration (firing during exhalation) to maximize tissue penetration. The system features Phononic Crystal Filtering to block ambient noise and Adaptive Echo Tuning to maintain coupling during movement. Over 6-8 hours, this minute force induces Cumulative Viscoelastic Creep, physically elongating stiff fascia without skin contact. Ref. Fig. 1

No. of Pages : 14 No. of Claims : 15

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(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007315 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Low-Cost Vision-Assisted Welding Torch Positioner for Irregular Sheet Geometries

(51) International classification	:B23K 37/02, B23K 9/127, B23K 37/00, B23K 9/095, B23K 37/047
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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9)MOHAMED THAARIQ N

(57) Abstract :
A low-cost vision-assisted welding torch positioning system for irregular sheet geometries is disclosed. The system integrates a compliant multi-DOF linkage, seam detection camera operating at 30 fps, and optional servo actuation to maintain torch inclination within 1–2°, and standoff within ±2 mm. The invention improves bead consistency, reduces operator-induced variation, and offers an affordable alternative to robotic welding systems for MSME fabrication sectors.

No. of Pages : 12 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007318 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Method for Closed-Form Approximation of Tail Probabilities Using Moment-Matching Expansions

(51) International classification	:G06Q 40/00, G06Q 40/06, G06F 17/18, G06Q 40/02, G06Q 10/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Estimating tail probabilities is essential in various fields, including statistical inference, reliability engineering, financial risk assessment, communication systems, and extreme-event modelling. Traditional numerical methods like Monte Carlo simulation, numerical integration, and saddle-point approximations frequently encounter challenges such as elevated computational expenses, instability in rare-event scenarios, or limited analytical manageability. This invention introduces a method for approximating tail probabilities of random variables in a closed form through moment-matching expansions, facilitating efficient, precise, and scalable assessment of distribution tails. The described approach begins by calculating a finite collection of statistical moments, such as mean, variance, skewness, kurtosis, and higher-order moments, derived from either empirical data or established probability distributions. The moments are subsequently aligned with a parametric or semi-parametric reference distribution through a structured expansion framework. The expansion framework could incorporate Gram–Charlier series, Edgeworth expansions, or orthogonal polynomial bases, adjusted to guarantee numerical stability and convergence in the tail region. The proposed method offers a closed-form correction mechanism that selectively re-weights expansion coefficients, ensuring that tail accuracy is maintained, unlike traditional series expansions which tend to degrade near extreme quantiles. This mechanism effectively mitigates oscillatory artefacts and divergence frequently encountered in traditional approximations. The resulting formulation provides clear analytical expressions for both upper and lower tail probabilities, eliminating the need for iterative computation or sampling-based estimation. The invention enhances the adaptive truncation of expansion terms by considering moment sensitivity and error bounds, facilitating a balance between computational complexity and precision in the approximation. This approach is relevant for a variety of random variables, encompassing both continuous and discrete types, as well as those characterised by heavy tails, skewness, and multimodal distributions. The suggested method greatly minimises computational demands while ensuring high precision in estimating rare-event probabilities. The invention proves to be exceptionally well-suited for real-time systems, embedded analytics, large-scale simulations, and decision-critical applications that demand rapid and dependable tail probability evaluation. The approach can be executed through software, firmware, or hardware-accelerated statistical engines, and can be incorporated into current probabilistic modelling workflows.

No. of Pages : 12 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007326 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “EMOTION-AWARE MULTILINGUAL SIGN LANGUAGE INTERPRETATION SYSTEM USING DEEP LEARNING”

(51) International classification	:G06N 3/04, G06N 3/08, G06K 9/00, G10L 25/63, G06K 9/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
[33] The present invention relates to an emotion-aware sign language interpretation system in the field of artificial intelligence and assistive communication technologies. The invention addresses the problem of enabling effective communication between hearing- and speech-impaired individuals and non-sign language users by providing real-time, vision-based interpretation of sign language. The system captures live video input and employs convolutional neural networks for hand gesture recognition and long short-term memory networks for sentence-level interpretation of continuous gestures. Facial emotion detection is integrated to enhance contextual understanding of communication intent. The interpreted text is translated into regional languages, particularly English to Tamil, and converted into speech using text-to-speech synthesis. The invention provides a low-cost, scalable, and practical assistive communication solution suitable for deployment in healthcare, educational, and public service environments. Accompanied by drawings [FIGS. 1-2]

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007327 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PEROVSKITE PHOTOVOLTAIC DEVICE COMPRISING A PHASE-DIVERGENT TORTUOSITY TPMS LATTICE ENCAPSULANT

(51) International classification	:H01L 51/44, H01L 51/42, H01L 51/48, H01L 51/00, H01L 51/46
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
PEROVSKITE PHOTOVOLTAIC DEVICE COMPRISING A PHASE-DIVERGENT TORTUOSITY TPMS LATTICE ENCAPSULANT The invention discloses a perovskite photovoltaic device comprising an encapsulant (100) formed as a triply periodic minimal surface (TPMS) lattice free of continuous planar diffusion barriers. The lattice is defined by unit cell dimensions of 200–1000 μm, porosity of 60–80%, and solid ligament thickness of 50–200 μm. This specific geometric configuration generates a phase tortuosity divergence ratio where the solid-phase tortuosity is at least 2.0 times the gas-phase tortuosity (gas 1.2). This architecture provides mechanical stress relief and optical transparency (90%) while structurally regulating phase transport. Ref. Fig. 1
No. of Pages : 14 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026
(21) Application No.202641007328 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENHANCED CONCRETE COMPOSITES INCORPORATING SILICA FUME WASTES FOR IMPROVED CARBONATION DURABILITY

(51) International classification	:C04B 18/04, C04B 28/02, C04B 18/08, C04B 18/14, C04B 18/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention introduces an innovative approach to reinforcing composite concrete with silica fume wastes, aimed at enhancing its mechanical properties for broader application in construction. By optimizing silica fume wastes within the concrete matrix, the invention achieves significant improvements in compressive strength, contributing to more durable, sustainable, and economically viable construction materials. This invention introduces a composite concrete composite material incorporating strategically oriented silica fume wastes to enhance mechanical properties significantly.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007331 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Distributed Autonomous Real-Time Adaptive On-Field Agricultural Robots with Artificial General Intelligence

(51) International classification	:G01N33/24, G06N20/00, B25J5/00, A01B79/00, A01B69/04, G06Q50/02, G01N33/24, G06N20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a distributed autonomous agricultural system and method configured for real-time on-field operation. The system comprises a plurality of field-deployed autonomous nodes, each capable of physically interacting with land to perform in-situ soil chemical and biological analysis, generate intervention decisions locally, validate the decisions using synchronized digital twin simulation models, and execute validated interventions directly on the land without human intervention. Each node integrates soil interaction mechanisms, chemical and biological processing subsystems including spectroscopic analysis, microfluidic microbial separation, and on-board microbial cultivation, along with precision actuation units for targeted intervention. The system further enables inter-node communication to support distributed coordination and adaptive field-level operation. The invention establishes a closed-loop cyber–bio–physical control framework operating directly at field level, enabling autonomous, validated, and precise agricultural intervention.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007334 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SECURITY SHIELD FOR THE APARTMENTS USING LORAWAN AND GSM TECHNOLOGY

(51) International classification	:G08B 19/00, G08B 25/10, G08B 21/16, G08B 25/00, G08B 25/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The current innovation will provide a smart automation and security system in an apartment that is aimed at providing 24/7 monitoring, real-time reaction, and adaptive protection against natural dangers and unauthorized access. The system comprises a microcontroller and a series of sensors, which include fire and thermal sensors, LPG gas leak sensor, door access sensor, and PIR motion sensor, and the actuators are exhaust fans, heating elements, and relay-driven circuits. Such necessary features include audible alerts in the form of a buzzer, a GSM modem to participate in the remoteness through SMS communication, an LCD to monitor real-time status, LED indicators to notify a user of instant feedback and a protective case to enhance durability and safety. Automatic shutdowns, power cutoffs and escalation of alerts are controlled by embedded safety protocols and event logging is provided to be transparent and offer diagnostics. Battery backup will also be provided that ensures continuous functionality when the power is down, and the modular design will be able to scale up to support multi-apartment complexes, thus ensuring that centralized monitoring and stable communication can be achieved. The invention also integrated a Centralized LoRa-GSM Integrated Network hub, which will consolidate sensor data of LoRa devices mounted in the respective flats. In the case of abnormal activity, the hub sends a notification to the security guard and the flat owner through GSM. The authenticated control, safety levels, and user-friendly operation are obtained with the help of secured communication between the user and the device since their interaction is provided with pre-registered SIM numbers enabling authorized communications, including “GET DATA, Power On, or Power Off, etc. This invention provides an affordable, trustworthy, and easy-to-use upgrade to the traditional method of apartment security systems.

No. of Pages : 47 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026

(21) Application No.202641007337 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PRESTRESSED CONCRETE BEAM SYSTEM WITH STEEL FIBERS IN TENSION ZONE

(51) International classification	:E04C 3/26, E04C 3/293, C04B 14/48, E04C 3/20, E04C 5/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a method of combined application of prestressing, silica fume, and corrugated steel fiber incorporation for enhancement of flexural behavior of reinforced concrete beams. The present disclosure significantly improved key flexural parameters, including load-carrying capacity, crack resistance, ductility index, and energy absorption capacity. The partial fiber reinforced prestressed concrete beams of present disclosure wherein fibers are placed selectively in the tension zone enhances ductility and strength while offering substantial material and cost savings without compromising structural performance. The present disclosure provides a simple and cost effective process for the preparation of the partial steel fiber reinforced prestressed concrete beams.

No. of Pages : 29 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007338 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Big Data Analytics and Consumer Behaviour: Understanding the Role of AI in Decision Making

(51) International classification	:G06N 20/00, G06Q 30/02, G06Q 30/06, G06Q 30/00, G06N 5/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT OF THE INVENTION The invention presents an innovative system and method for leveraging big data analytics to dissect consumer behavior, with a focus on elucidating AI's integral role in decision-making processes. In an increasingly data-driven world, businesses struggle with opaque AI predictions that fail to explain behavioral influences. This system addresses this by integrating real-time data ingestion from e-commerce, social platforms, and IoT devices into a hybrid AI framework. Key components include transformer models for advanced pattern recognition, federated learning for secure, distributed training, and explainable AI tools to demystify predictions. For example, the system processes transactional data (e.g., purchase histories), textual sentiment from reviews, and behavioral signals from app usage to build dynamic consumer profiles. It predicts outcomes like purchase intent with high accuracy (e.g., 80% in case studies) while providing visual explanations, such as feature importance graphs showing how AI recommendations sway choices by 20-30%. Novel aspects include real-time adaptability without extensive historical data and incorporation of decision theory for nuanced insights. Applications span retail for personalized marketing, finance for risk assessment, and e-commerce for churn prevention. By overcoming prior art limitations like batch processing and lack of interpretability, this invention empowers ethical, transparent AI use, fostering trust and efficiency. Implementation on cloud infrastructure ensures scalability for petabyte-scale data. Overall, it transforms raw big data into strategic intelligence, highlighting AI's decision-shaping mechanisms.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026

(21) Application No.202641007339 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Accessible Smart Pill Dispenser with Audio Guidance, Tactile Controls, and Automated Scheduling

(51) International classification	:A61J 7/04, G16H 20/13, A61J 1/03, G16H 40/67, G16H 40/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT Accessible Smart Pill Dispenser with Audio Guidance, Tactile Controls, and Automated Scheduling The Present invention of smart pill dispenser with audio guidance, tactile controls and automated schedule options relates to the medical management schedule for elderly and visually impaired people. The device ensures accurate dispensing of pills at scheduled times, provides audio and tactile alerts, and allows caregivers to monitor adherence remotely. This solution improves safety, independence, and medication compliance for users with visual impairments.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007340 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MODULAR BIONIC HAND WITH SINGLE-ACTUATOR MULTI-BAR FINGER MECHANISMS FOR HUMAN-LIKE GRASPING

(51) International classification	:B25J 15/00, B25J 15/10, B25J 15/08, B25J 15/12, A61F 2/58
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT MODULAR BIONIC HAND WITH SINGLE-ACTUATOR MULTI-BAR FINGER MECHANISMS FOR HUMAN-LIKE GRASPING A modular bionic hand with single-actuator multi-bar finger mechanisms for human-like grasping is provided. The hand system 100 includes a palm structure 102 having an anthropomorphic geometry; and one or more fingers 104 that are detachably coupled to the palm structure 102. Each finger includes a single rotary actuator 108, a underactuated multi-bar linkage 110 mechanically coupled to the rotary actuator 108; and one or more articulated phalange segments 112 driven by the underactuated multi-bar linkage 110. The rotary motion of the rotary actuator 108 in transformed by the underactuated multi-bar linkage 110 into a coordinated flexion of the one or more articulated phalange segments 112 along a constant closed kinematic path, thereby producing a human-like curling motion using one actuator per finger. FIG. 1

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007341 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR AUTOMATED SPLITTING OF SHARED DINING COSTS USING PHOTOGRAPH-BASED VISUAL COST ALLOCATION

(51) International classification	:G06Q 50/12, G06Q 30/02, G06Q 30/06, G06K 9/00, G06K 9/62	(71)**Name of Applicant :** **1)VELLORE INSTITUTE OF TECHNOLOGY** Address of Applicant :Tiruvalam Road, Katpadi, Vellore, Tamil Nadu – 632014, India. Vellore Tamil Nadu India (72)**Name of Inventor :** **1)DR. P. BASKARAN** **2)AYUISHI SINGLA**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR AUTOMATED SPLITTING OF SHARED DINING COSTS USING PHOTOGRAPH-BASED VISUAL COST ALLOCATION A system for automated splitting of shared dining costs using photograph-based visual cost allocation is provided. The system 100 includes bill-splitting server 106 that interacts with user device 102 to receive dining location and retrieve corresponding menu data. Photograph of dishes on table, captured via user device 102, is processed by object detection model 106A to identify dish objects and generate bounding boxes. Each detected dish is assigned a name, cost, and spatial coordinates by matching against restaurant menu. Dish zones are created by mapping these coordinates into selectable regions. Users can allocate consumption by placing visual identifiers on dish zones or entering consumption values manually. The system 100 computes each user's share by summing allocated dish costs, calculating proportional contributions, and distributing tip and tax accordingly. An itemized breakdown is generated, showing subtotals, tip, tax, and total payable amounts for each user. FIG. 1
No. of Pages : 34 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007342 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : EYE-BLINK AND HEAD-TILT BASED ASSISTIVE COMMUNICATION SYSTEM AND METHOD

(51) International classification	:G06K 9/00, G06F 3/01, G06V 40/18, G06V 40/19, G06V 40/16
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)DR. KONGUVEL E
4)DR. VIDHYA S

(57) Abstract :
ABSTRACT EYE-BLINK AND HEAD-TILT BASED ASSISTIVE COMMUNICATION SYSTEM AND METHOD An eye-blink and head-tilt based assistive communication system (100) is provided for a non-verbal user. The system (100) includes a camera (102) configured to capture images of a user's face, a processing unit (104) configured to extract facial landmarks and compute an eye aspect ratio (EAR), an inertial measurement unit (IMU) (106) configured to sense head orientation, a controller (108), and an audio output unit (110) operatively coupled to the controller (108). The controller (108) determines eye open and eye closed states based on comparison of the EAR with a predetermined threshold, enters an active mode upon continuous eye closure for a first predetermined duration, and exits the active mode upon continuous eye openness for a second predetermined duration shorter than the first predetermined duration. In the active mode, the controller (108) generates a command by combining a counted number of eye blinks with a detected head-tilt direction and delivers the command as audible speech locally without cloud connectivity. FIG. 1

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007343 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR BIAS-AWARE AND FAIRNESS-OPTIMIZED LEARNING ON HEALTHCARE-RELATED DATASETS FOR IDENTIFYING RARE MEDICAL EVENTS

(51) International classification	:G06N 20/00, G16H 50/20, G16H 50/70, G16H 10/60, G16H 40/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR BIAS-AWARE AND FAIRNESS-OPTIMIZED LEARNING ON HEALTHCARE-RELATED DATASETS FOR IDENTIFYING RARE MEDICAL EVENTS A system for bias-aware and fairness-optimized learning on healthcare-related datasets for identifying rare medical events is provided. The system 100 includes an input data source 102 that obtains datasets and a training server that receives datasets from input data source 102; analyzes the datasets to determine statistical indicators and compute empirical group distribution; computes, (i) a demographic correction term based on ratio of target group distribution to empirical group distribution, (ii) a rarity term based on empirical probability of associated outcome label, and (iii) an uncertainty term derived from prediction probability entropy for each dataset; combines the demographic correction term, rarity term, and uncertainty term using weighted coefficients to generate bias-aware weight for each dataset; normalizes each bias-aware weight across datasets to generate normalized bias-aware weight; and applies the normalized bias-aware weights during training of machine-learning model 106A to balance learning across demographic groups and rare medical events. FIG. 1

No. of Pages : 32 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007344 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : VISIBLE-LIGHT CROSSLINKABLE POLYPHENOL-LOADED XANTHAN–CHITOSAN COMPOSITE HYDROGEL FOR WOUND HEALING

(51) International classification	:A61L 26/00, A61L 15/28, A61L 27/52, C08B 37/00, C08B 37/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT VISIBLE-LIGHT CROSSLINKABLE POLYPHENOL-LOADED XANTHAN–CHITOSAN COMPOSITE HYDROGEL FOR WOUND HEALING A method for preparing a visible-light–crosslinkable composite hydrogel suitable for wound-healing applications is provided. The method includes surface functionalizing xanthan gum by reacting xanthan gum with glycidyl methacrylate anhydride to introduce methacrylate groups onto the polymer backbone; surface functionalizing chitosan by reacting chitosan with methacrylic anhydride to introduce methacrylate groups; dissolving the methacrylated xanthan gum and the methacrylated chitosan in an aqueous medium to obtain a hydrogel precursor mixture; adding a photoinitiator comprising lithium phenyl-2,4,6-trimethylbenzoylphosphinate (LAP) to the hydrogel precursor mixture; incorporating a polyphenol comprising caffeic acid into the hydrogel precursor mixture; and exposing the mixture to visible light to induce photocrosslinking and form a composite hydrogel suitable for wound-healing applications. FIG. 1

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007347 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTRINSICALLY SAFE ACOUSTIC POWER BUSBAR UTILIZING IMPEDANCE-MATCHED LIQUID METAL COUPLING WITH FLUID DYNAMIC STABILIZATION

(51) International classification	:H02G 5/06, H02G 5/00, H02G 5/10, H01B 1/02, H01B 9/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)BAPATLA SURENDRA BABU

(57) Abstract :
INTRINSICALLY SAFE ACOUSTIC POWER BUSBAR UTILIZING IMPEDANCE-MATCHED LIQUID METAL COUPLING WITH FLUID DYNAMIC STABILIZATION The present invention discloses an intrinsically safe power transmission system for hazardous environments (Class I, Division 1). The system utilizes a segmented Basalt Fiber Reinforced Polymer (BFRP) waveguide (102) coupled via Flexible Micro-Gap Joints (200) containing a Gallium-Indium-Tin liquid metal couplant (202). The system is characterized by impedance matching between the fluid and waveguide to minimize reflection losses, and controlled acoustic streaming within a laminar regime to prevent turbulent coupling failure. The design includes specific volume constraints to avoid size-dependent acoustic impedance deviations and utilizes an inert gas seal to prevent oxide skin formation. A fail-safe mechanism ensures immediate wave collapse without spark generation upon fracture. Ref. Fig. 1

No. of Pages : 13 No. of Claims : 22

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007349 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADAPTIVE POWER CONTROL OF ELECTRIC VEHICLE CHARGING STATIONS BASED ON VOLTAGE SENSITIVITY

(51) International classification	:B60L53/63, H02J7/02, H02J7/90, H02J103/35
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an adaptive electric vehicle charging station power control system for use in power distribution networks. The system dynamically regulates the grid-side charging power of an electric vehicle charging station within its rated capacity based on real-time voltage sensitivity indices measured at the point of connection. Local voltage measurements and charging station power variations are utilized to estimate voltage sensitivity without requiring a complete distribution network model or centralized optimization. Based on the estimated voltage sensitivity and available voltage margin, the charging station power is adaptively increased or reduced to prevent voltage violations while maximizing charging utilization. The proposed system operates in real time using computationally lightweight, rule-based control logic and may optionally coordinate with smart power converters to enhance voltage stability and network hosting capacity. The invention enables scalable, low-cost, and grid-friendly deployment of electric vehicle charging stations in residential, commercial, and microgrid environments.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026

(21) Application No.202641007350 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Dual Phytosomal Nanoformulation and Method of Preparation Thereof

(51) International classification	:A61K 47/24, A61K 31/05, A61K 9/51, A61P 25/16, A61K 9/50	(71)**Name of Applicant :** **1)Professor B. Ramya Kuber** Address of Applicant :Institute of Pharmaceutical Technology, Sri Padmavati Mahila Visvavidyalayam, Tirupati-517502, Andhrapradesh, India Tirupati Andhra Pradesh India **2)Dr. P. N. Mayuri** **3)Dr. N. Varalakshmi** **4)J. Jyothirmayi**
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(86) International Application No Filing Date	: :01/01/1900	**3)Dr. N. Varalakshmi** **4)J. Jyothirmayi**
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present invention relates to a dual phytosomal nanoformulation and a method of preparation thereof to improve solubility, stability and bioavailability. The formulation comprises resveratrol and syringic acid co-encapsulated within a phosphatidylcholine-based phytosomal carrier for the management of neurodegenerative disorders including Parkinson's disease. The dual phytosomal nanoformulation is prepared using a thin-film hydration technique to obtain nanosized phytosomes with improved encapsulation efficiency and physicochemical stability. The formulation exhibits suitable particle size, surface charge and encapsulation characteristics facilitating improved membrane permeability. The invention provides a biocompatible and scalable nano-delivery system for improved delivery of polyphenolic compounds and is useful for neuroprotective applications, particularly in the context of neurodegenerative disorders such as Parkinson's disease.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007352 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DeepAgriNet: CNN-LSTM-Based Crop Yield Forecasting Using Multisource Agricultural Data

(51) International classification	:G06N 20/00, G06Q 10/04, G06Q 50/02, G06Q 10/06, G06N 20/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Proper forecasting of crop yields is essential to food security, agricultural planning, and stability in supply-chain; nonetheless, the conventional methods of yield forecasting have remained low yield forecasting failures due to dynamic climatic and environmental factors. The traditional statistics approach and single source machine learning models are usually based on historical averages or single parameter which only gives low levels of prediction (70-80%) and low levels of early stage forecasting (55-60%) mostly when there was an extreme weather and when weather changes. In addition, the models do not collectively model spatial crop health patterns and long-term temporal dependencies of multisource agricultural data. In order to overcome the stated limitations, the current work suggests Deep Agricultural Intelligence Network (DeepAgriNet) as an integrated CNN-LSTM-based crop yield prediction application that incorporates satellite imagery, weather time-series data, as well as soil characteristics and historical yield data in a single deep learning model. Massive testing of various crops (rice, wheat, maize, and soybean) in ten growing seasons shows that DeepAgriNet can predict the yields at an average of 96.8, early-stage predictability of 91, and much lower MAE and RMSE than standard machine learning and statistical models. The suggested system is also highly scalable, automated, and resilient to the unpredictable climatic conditions. In general, DeepAgriNet is a promising, climate-responsive, and data-driven approach to precision agriculture, which allows to estimate early yields with high accuracy and optimize resources, as well as make sustainable decisions in agriculture.

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026

(21) Application No.202641007358 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An AI and IoT-Based Smart Farming System for Real-Time Soil Health Monitoring and Irrigation Control

(51) International classification	:G06Q 50/02, G06N 20/00, G06N 3/08, G06N 5/04, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)S. V. Sudheer Kumar
4)Dr. P. Bhargavi

(57) Abstract :
The present invention relates to an Artificial Intelligence (AI) and Internet of Things (IoT) based smart farming system for real-time monitoring and optimization of soil health in agricultural fields. The system comprises a modular IoT sensor network configured to continuously measure soil and environmental parameters including soil moisture, soil pH, nutrient (NPK) levels, temperature, humidity and rainfall. Sensor data is converted into digital signals and processed by a central processing unit which performs data preprocessing and analysis and transmits the processed data to a cloud platform for storage and visualization. An AI-driven decision support framework analyzes real-time and historical data to generate predictive outputs related to soil fertility status, crop suitability, irrigation scheduling, fertilizer requirements and crop yield estimation. Based on the predictive outputs, an automated irrigation control mechanism comprising motor-driven water pumps is actuated to deliver optimized quantities of water with rainfall detection enabling automatic suspension of irrigation during precipitation events. The system further includes validation of sensor-derived soil parameters against conventional laboratory soil testing results to enhance accuracy and reliability. A mobile and cloud-based user interface provides real-time dashboards, alerts and advisory information to users. The integrated system enables efficient resource utilization, improved soil health, enhanced agricultural productivity and sustainable farming practices.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007368 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT MULTI-SENSOR SYSTEM AND METHOD FOR PREDICTIVE TRAIN BOGIE POSITIONING AND PASSENGER FLOW MANAGEMENT

(51) International classification	:B61L 25/02, G01S 13/931, B61L 15/00, B61L 27/00, G01S 13/86
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
The invention relates to an Intelligent Multi-Sensor System and Method for Predictive Train Bogie Positioning and Passenger Flow management. The system integrates Doppler Radar Units (101, 102), Load Cell Arrays (103), Computer-Vision Cameras (105), Environmental Sensor Units (108), Micro-Climate IoT Nodes (109), and a Train Telemetry Interface (107) to capture velocity, mass distribution, braking parameters, environmental factors, and crowd states. All sensor data is synchronously fused within an Edge Processing Unit (110) supported by a GPU/AI Accelerator (111) executing device-implemented kinematic models and filtering operations to generate bogie-level stopping predictions with ±0.5 m precision. A Central Intelligence Layer aggregates logs from multiple stations for long-term calibration, deviation learning, and continuous optimization through the Control Room Console. Passenger guidance is delivered via LED Displays (104), Edge-Warning Bars (112), Public Address System, and Mobile Connectivity Hardware, reducing dwell time, improving boarding efficiency, and enhancing overall platform safety.

No. of Pages : 36 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007369 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SELF-POWERED RECONFIGURABLE INTELLIGENT SURFACE WITH ACOUSTO-CAPILLARY LIQUID GRATINGS AND ANALOG FEEDBACK

(51) International classification	:G02F 1/33, G02F 1/11, G02B 5/18, G02B 5/32, G02F 1/335
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
SELF-POWERED RECONFIGURABLE INTELLIGENT SURFACE WITH ACOUSTO-CAPILLARY LIQUID GRATINGS AND ANALOG FEEDBACK The present invention discloses a "Self-Optimizing 5G Glass." To solve the problem of signal attenuation in buildings without active power, the system functions as a transparent Liquid Metal Hologram. Channels (102) of EGaIn within a Glass Substrate (100) are vibrated by Ultrasound Transducers (112) to create physical Ripples (104) that act as a Diffraction Grating for 5G signals. The innovation is the Direct-Drive Feedback: transparent Rectennas (110) harvest the signal energy and use it to power the vibration. The system utilizes a "Closed-Loop Acousto-Capillary Coupling" mechanism where reflection efficiency modulates with signal strength. Ref. Fig. 2

No. of Pages : 11 No. of Claims : 22

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007371 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DEEP NEURAL NETWORK-BASED INTRUSION DETECTION SYSTEM BY USING MACHINE LEARNING INTERFACES FOR A CLOUD ENVIRONMENT

(51) International classification	:G06N 3/04, G06N 3/08, H04L 29/06, H04L 9/40, G06F 21/55
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Mohammad Arif Pasha
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(57) Abstract :
ABSTRACT OF THE INVENTION: This invention presents a sophisticated deep neural network (DNN)-based intrusion detection system (IDS) optimized for cloud environments through advanced machine learning (ML) interfaces. As cloud adoption surges, vulnerabilities to cyber intrusions escalate, necessitating intelligent, scalable defenses. The system ingests diverse data streams—network traffic, system logs, and API interactions—via seamless ML interfaces compatible with platforms like AWS and Azure. A hybrid DNN architecture combines convolutional neural networks (CNNs) for spatial feature extraction, recurrent neural networks (RNNs) like LSTMs for temporal patterns, and autoencoders for anomaly baseline establishment. Federated learning ensures privacy-compliant training across edge devices, avoiding data centralization risks. In practice, the system achieves superior performance: in a case study with 10,000 simulated attacks, it detects 96% of threats with 1.5% false positives, outperforming traditional IDS by 20%. Explainable AI components, such as attention mechanisms, provide interpretable insights into detections, aiding compliance and forensics. Novel elements include reinforcement learning-driven adaptive thresholds and real-time auto-scaling for cloud elasticity. Applicable in sectors like finance for fraud prevention, healthcare for data security, and e-commerce for uptime assurance, this IDS minimizes breach impacts, potentially reducing annual losses by millions. Deployed as containerized services, it integrates effortlessly into existing infrastructures, promoting proactive cybersecurity. Overall, it advances cloud security by merging DNN prowess with ML interfaces for resilient, intelligent threat mitigation.

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007373 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A Novel Adaptive Ant-Based LFU (A²LFU) Hybrid strategy for Efficient Caching in Content-Centric Networks

(51) International classification	:H04L 29/08, H04L 29/06, H04L 12/24, H04L 67/568, H04L 29/12
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. C. Victoria Priscilla

(57) Abstract :
The present invention proposes a Novel Adaptive Ant-Based LFU (A²LFU) hybrid caching strategy for efficient content management in Content-Centric Networks. The system integrates the stability of the Least Frequently Used caching policy with the adaptability of ant colony inspired learning to address dynamic content popularity and network variability. By employing pheromone-based reinforcement and evaporation mechanisms, intermediate network nodes autonomously learn optimal caching behaviors using local information without centralized control. The hybrid approach enables effective differentiation between long-term popular content and short-lived demand spikes, thereby reducing cache pollution and unnecessary content eviction. The proposed strategy improves cache hit ratio, reduces content retrieval latency, optimizes bandwidth utilization, and enhances overall network performance. Designed for scalability and low overhead, the A²LFU mechanism is suitable for deployment across core, edge, and fog environments, making it a robust and intelligent solution for next-generation content-centric and information-centric networking architectures.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007374 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DISTRIBUTED-ARCHITECTURE SYSTEM AND METHOD FOR PRECISION GRAVIMETRIC FLUID MINERALIZATION WITH ACTIVE EMI NOISE ISOLATION

(51) International classification	:C02F 1/68, C02F 1/00, C02F 1/66, C02F 1/48, C02F 1/46
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention provides a multi-microcontroller based water remineralization system that achieves precision dosing through synchronized electromagnetic interference elimination. The system uses three controllers: a master for logic and peripheral control, and two slaves for actuator control and mineral dosing. During weight measurements, the master sends stop commands to slaves, creating a 150-300ms 'quiet window' where all motors cease, allowing vibration-free weight capture. A self-neutralization protocol uses majority logic sampling to verify chamber cleanliness before each use. Minerals are mixed using high-velocity water injection creating turbulent flow, eliminating mechanical stirrers. A heartbeat fail-safe allows slaves to autonomously shut down pumps if the master controller crashes. The system achieves ±2g accuracy despite component aging and pressure variations, enabling personalized mineral profiles for different users.

No. of Pages : 21 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007378 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR AUTOMATED ENTERPRISE SERVICE DECISIONING USING KNOWLEDGE RETRIEVAL AND AUTONOMOUS PROCESSING LOGIC

(51) International classification	:G06Q 10/06, G06N 5/04, G06F 17/30, G06N 5/02, G06Q 10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Siva Hemanth Kolla

(57) Abstract :
ABSTRACT OF THE INVENTION A SYSTEM AND METHOD FOR AUTOMATED ENTERPRISE SERVICE DECISIONING USING KNOWLEDGE RETRIEVAL AND AUTONOMOUS PROCESSING LOGIC An intelligent system and method for automated enterprise service decisioning are disclosed. The invention integrates knowledge retrieval, contextual reasoning, and autonomous processing logic to dynamically evaluate and execute enterprise service decisions. Incoming service events are enriched with relevant enterprise knowledge and contextual signals, reasoned using adaptive inference mechanisms, and autonomously translated into executable service actions. The system enables scalable, explainable, and governance-compliant enterprise service automation across complex digital environments. Figure of abstract: FIG. 1.

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007379 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR CONTEXT-AWARE AUTONOMOUS ENTERPRISE SERVICE ORCHESTRATION USING RETRIEVAL-DRIVEN INTELLIGENCE

(51) International classification	:G06N 5/04, G06N 5/02, G06Q 10/06, H04L 12/24, G06N 20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Siva Hemanth Kolla

(57) Abstract :
A SYSTEM AND METHOD FOR CONTEXT-AWARE AUTONOMOUS ENTERPRISE SERVICE ORCHESTRATION USING RETRIEVAL-DRIVEN INTELLIGENCE The present invention discloses a retrieval-augmented, context-aware autonomous system and method for enterprise service orchestration. The system ingests real-time and historical enterprise context, retrieves relevant operational and policy knowledge, and autonomously generates compliant orchestration actions using intelligent reasoning models. Execution outcomes are continuously monitored and fed back to improve future decisions. The invention enables adaptive, explainable, and policy-aware orchestration across complex enterprise environments, improving operational efficiency, resilience, and governance. Figure of abstract: FIG. 1.

No. of Pages : 20 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007391 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Method and System for Multi-Hazard Structural Analysis and Risk Assessment of Compartmental Silos using Finite Element Modeling and Machine Learning

(51) International classification	:G06F 17/50, G06F 19/00, G01V 1/30, G01V 1/28, G06F 30/23
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract This invention relates to a method and system for multi-hazard structural analysis and risk assessment of compartmental silo structures used for bulk material storage in industrial applications. Compartmental silos are subjected to complex loading conditions arising from self-weight, material-induced lateral pressures, wind forces, and seismic excitations, which collectively influence their structural performance. Conventional design and analysis approaches often consider these loads independently and rely on simplified assumptions, resulting in limited accuracy in predicting stress distribution, deformation behavior, and potential failure mechanisms in multi-compartment configurations. The invention provides an integrated analytical framework that employs three-dimensional finite element modeling to accurately represent the geometry, boundary conditions, and inter-compartment connectivity of silo structures. Realistic modeling of material pressure distribution is incorporated to capture material–structure interaction effects that dominate silo behavior during operation. The system systematically evaluates individual and combined loading scenarios to identify governing conditions and critical response parameters such as stresses, bending moments, and displacements. In addition to physics-based structural analysis, the invention integrates machine learning techniques for intelligent risk assessment. Structural response data generated from finite element simulations are utilized to train predictive models capable of identifying vulnerability patterns and estimating structural risk under varying hazard intensities. This data-driven capability enhances the reliability of performance evaluation and supports proactive identification of critical structural regions. The invention further incorporates cross-platform validation procedures to ensure consistency and accuracy of analytical results within acceptable engineering tolerances. By combining validated numerical modeling with intelligent predictive analytics, the invention provides a robust decision-support system for structural design, evaluation, and optimization of compartmental silos. The proposed method and system improve confidence in structural safety assessments, support efficient design and retrofitting strategies, and contribute to the development of resilient and reliable bulk material storage infrastructure subjected to multi-hazard environments.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026

(21) Application No.202641007394 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IoT-Based Renewable Energy Adoption Tracker for Monitoring Corporate Renewable Energy Usage in ESG Disclosures

(51) International classification	:G06Q 50/06, G06Q 10/06, G06Q 10/10, H04L 29/08, H04L 9/32
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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8)Ms Ashwini

(57) Abstract :
The invention discloses an IoT-based renewable energy adoption tracking system designed to measure, verify, and report the renewable energy usage of corporate entities for ESG disclosures. It integrates IoT smart meters, cloud analytics, secure ledger mechanisms, and automated reporting tools to ensure transparent, real-time, and audit-ready renewable energy data. The system facilitates accurate ESG reporting and promotes corporate sustainability compliance.

No. of Pages : 10 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2026
(21) Application No.202641007397 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Spectral Feature Representation Framework Enabling Accurate and Efficient Cardiac Abnormality Detection

(51) International classification	:G06F 19/00, G06K 9/00, A61B 5/00, A61B 5/024, A61B 5/0245
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The current invention is connected to a spectral feature representation system of proper and effective identification of heart abnormalities. The framework converts the signals obtained in the heart to spectral-domain representations to obtain diagnostically significant features which are resistant to noise, artifacts, and physiological variability. The invention comprises signal acquisition, preprocessing, spectral transform, feature representation, analysis evaluation and comparative validation and is represented as a single architecture. The framework uses systematical comparisons between spectral-domain representations and spatial-domain approaches to ensure a better diagnostic accuracy, less computational complexity and resource usage. The extensible and modular architecture can be used in clinical diagnostic systems, wearables and remote monitors. The invention overcomes the constraints of the existing cardiac diagnostic systems in the prior art by offering a system that is both scalable and adaptable with regards to cardiac abnormalities detection in both real-time and offline diagnostic systems.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/01/2026

(21) Application No.202631003762 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN AUTOMATED BRICK MANUFACTURING PRODUCTION LINE SYSTEM

(51) International classification	:B28B 13/02, B28B 15/00, B28B 17/00, B65G 37/00, B65G 47/24
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Embodiments of the present disclosure relate to an automated production line system (100) for manufacturing a set of bricks. The system (100) includes a machine chassis (118) controlled by processor (102) executing stored instructions in a memory (104). A dice (108) is moved between defined positions by a first actuation cylinder (106_1), a conveyor plate (112) carrying a brick composition is horizontally positioned by a second actuation cylinder (106_2) to align with the dice (108). A vertically movable gate (114), actuated by a third actuation cylinder (106_3), cooperates with the conveyor plate (112) to transfer the brick composition onto the dice (108). A molding plate (116), driven by a fourth actuation cylinder (106_4), presses the brick composition on the dice (108) to form bricks corresponding to a predefined mold shape. The coordinated horizontal and vertical movements enable precise placement and shaping of bricks in a controlled manner.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2026

(21) Application No.202631007129 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A composition and a method of stabilisation of clayey soil using Bio-polymer with Microbial Induced Calcite Precipitation

(51) International classification	:C09K 17/40, C09K 17/00, C09K 17/32, C09K 17/14, C09K 101/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to the field of strengthening of clayey soil in the cold areas which are susceptible to frost action. More particularly, the invention provides an eco-friendly composition (100) and a method (200) for significant enhancement in strength of clayey soil. Due to the continuous freezing and thawing cycles in cold hilly regions, the 5 strength of the clayey soil reduces and the same can be stabilised by using a natural biopolymer i.e. guar gum and microbial induced calcite precipitates. The strength of the clayey soil undergoing freezing thawing can be stabilised by using microbial induced calcite precipitates (MICP). The invention discloses a composition of 0.5% guar gum and 1.0 OD MICP added to clayey soil resulting in enhancement in strength of the soil by 432.61% in 10 the first cycle of freeze thawing, and a method thereof.

No. of Pages : 29 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/01/2026
(21) Application No.202631007545 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND A METHOD FOR ADAPTIVE MACERATION CONTROL BASED ON FIBRE GENETIC AND ANATOMICAL TRAITS FOR LONG FIBRE RECOVERY

(51) International classification	:C12P 19/02, C12P 19/14, C12Q 1/68, C12N 15/82, G01N 33/48
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A SYSTEM AND A METHOD FOR ADAPTIVE MACERATION CONTROL BASED ON FIBRE GENETIC AND ANATOMICAL TRAITS FOR LONG FIBRE RECOVERY The present disclosure relates to a system and a method for genotype-responsive maceration and regulated long fiber recovery from lignocellulosic tree biomass. The system combines the analysis of tree genetics and fiber anatomy with adaptive process control to change the chemical, thermal, enzymatic, and mechanical actions that happen during fiber extraction. Genetic and anatomical factors like fibre length, cell wall thickness, and the ratio of lignin to cellulose are used to figure out a fibre resistance coefficient that shows how well the fibre wall can handle stress. Using this coefficient, maceration parameters are changed in real time while keeping an eye on fibre wall stress indicators to keep the fibres from breaking before the structure fails. The disclosed method makes it possible to selectively delignify fibers with enzymes, limit mechanical energy to fibers, and recover and condition fibers with little stress. The invention improves the preservation of fiber length, tensile performance, yield consistency, and resource efficiency by linking biological input characteristics with real-time industrial processing control. It also lowers the amount of chemicals and energy used. The system and method offer a high-tech, scalable way to make long, high-quality fibers in an industrial setting.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/01/2026
(21) Application No.202631007684 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A CROSS-DOMAIN SENTIMENT ANALYSIS SYSTEM AND METHOD FOR ZERO-SHOT GENERALIZATION ACROSS HETEROGENEOUS TEXTUAL DOMAINS

(51) International classification	:G06N 3/04, G06N 3/08, G06F 40/30, G06N 3/0464, G06F 16/35
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Abhay Kumar
5)Ramya Mall

(57) Abstract :
The present invention discloses a cross-domain sentiment analysis system (100) and method for zero-shot generalization across heterogeneous textual domains comprising a data interface unit (102) configured to ingest, sanitize, and tokenize raw textual inputs into uniform numerical sequences. A contextual encoding unit (104), comprising stacked self-attention-based transformer layers (104a), generates high-dimensional contextual embeddings. A hybrid feature extraction unit (106) integrates a parallel multi-kernel convolutional unit (106a) for capturing localized semantic patterns and a bidirectional sequential processing unit (106b) with a self-attention module (106c) to model long-range contextual dependencies. A multi-modal fusion integration unit (108) aggregates local, global, and contextual representations into a unified dense feature vector. A dual-head inference unit (110) includes a primary sentiment prediction head (110a) and an adversarial domain adaptation head (110b) with a gradient reversal block (110c) to suppress domain-specific bias. The invention achieves robust, domain-invariant sentiment prediction without target-domain supervision.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/01/2026

(21) Application No.202631007687 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Cementless Pervious Concrete using Waste Steel Slag Aggregates, and a Process for the Preparation thereof.

(51) International classification	:C04B 18/14, C04B 28/04, C04B 28/08, C04B 18/08, C04B 18/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Title: Cementless Pervious Concrete using Waste Steel Slag Aggregates, and a Process for the Preparation thereof. The present invention relates to Cementless pervious concrete is developed using 100% basic oxygen furnace/ Linz-Donawitz (BOF)/LD steel slag as the coarse aggregate and a cementless binder, thereby eliminating the need for portland cement and natural coarse aggregates. The binder consists of approximately equal mass fractions of fly ash and ground granulated blast-furnace slag (GGBS), activated by solid sodium metasilicate pentahydrate (SMSP); only water is added to produce the fresh mix. The steel-slag pervious concretes achieve compressive strengths of approximately 13.96 MPa (80/20) and 13.15 MPa (60/40), with permeability coefficients of about 14.3 mm/s and 12.9 mm/s, respectively. Precast panels of size 500 × 250 × 80 mm, manufactured from these mixes, exhibit flexural strengths of approximately 2.30 MPa (80/20) and 2.19 MPa (60/40), with fatigue cycles of roughly 1.6 × 104 and 9.6 × 103, confirming their suitability for pedestrian and light-vehicle permeable pavement applications. The invention thus provides an ambient-cured, cementless concrete that fully valorises steel slag waste, reduces clinker-related CO_2 emissions, and enhances urban stormwater management through durable permeable pavement systems. Fig. 1

No. of Pages : 23 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/01/2026
(21) Application No.202631008067 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DECENTRALIZED WEB3-NATIVE AI LAYER FOR SELF-LEARNING SMART CONTRACTS AND TRUSTLESS AI VERIFICATION ON BLOCKCHAIN

(51) International classification	:H04L 9/06, G06Q 20/36, G06Q 20/38, H04L 9/32, G06N 3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A decentralized Web3-native AI layer system (100) for delivering verifiable artificial intelligence services to blockchain-based decentralized applications. The system comprises a blockchain layer (102) for high-throughput AI operations, a utility token module (104) for token-gated feature access across basic, advanced, and premium tiers, a frontend application layer (106) with wallet connection and feature-gating interfaces, a hook and service layer (108) for balance checks and access control, a feature gate module (110) implementing deterministic token-gated access by comparing UTK balances against thresholds, a UTK balance check module (112) for on-chain balance verification, an AI services layer (114) comprising Web3-native AI modules including chatbot, auditor, NFT generator, trading assistant, and news AI, a self-learning smart contract module (116), an AI verification module (118) storing hashes and metadata on-chain for trustless verification, and a cross-chain optimization engine (120) for computing optimal routing strategies across multiple blockchain networks. (Fig. 1)

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/01/2026
(21) Application No.202631008071 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND METHOD FOR ANALYZING NEUROIMAGING DATA

(51) International classification	:A61B 5/00, G16H 50/20, A61B 5/055, G06N 3/04, G06N 3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT “A SYSTEM AND METHOD FOR ANALYZING NEUROIMAGING DATA” The present disclosure relates to a system (100) for analyzing neuroimaging data to provide objective biomarkers for Major Depressive Disorder. The system (100) comprises a Diffusion Tensor Imaging (DTI) scanner interface (101) configured to receive raw diffusion signals, a preprocessing unit (102) implemented on a Field-Programmable Gate Array (FPGA) for cleaning, transforming, and padding the diffusion data into a standardized input vector, and an accelerator unit (103) electrically connected to the preprocessing unit (102) and comprising an architecture with convolutional and attention mechanisms for feature extraction. Metadata fusion logic (108) enables integration of clinical data with neuroimaging features. An output interface module (104) controlled by an embedded microcontroller (109) displays diagnostic insights, trends, and visualizations. The integrated hardware-optimized multi-stage pipeline operates in real time and is housed within a portable, low-power enclosure (110) to generate biomarkers including Fractional Anisotropy, Axial Diffusivity, and Mean Diffusivity.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/01/2026
(21) Application No.202631008076 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A METHOD FOR MANUFACTURING ECO-FRIENDLY FUSED DEPOSITION MODELLING FILAMENT FROM PRINTED CIRCUIT BOARD WASTE

(51) International classification	:B09B101/17, B09B3/30, B09B3/35, B09B3/00, B29B7/66, B29B9/00, B29B7/00, B29B17/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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5)DEOGHARE, Ashish Bhalchandra
6)MAHMUN, Amdadul

(57) Abstract :
The present invention relates to a method for manufacturing eco-friendly fused deposition modelling filament from printed circuit board waste. The development of eco-friendly composite filaments for Fused Deposition Modelling (FDM) by utilizing non-metallic electronic waste from printed circuit boards (PCBs). Discarded PCBs (101) are subjected to grinding (102) and sieving (103) to obtain fine PCB powder (104) of particle size less than 150 microns. The PCB powder is used as a filler material and blended with thermoplastic polymers comprising Polylactic Acid (PLA) granules (106) and Polyethylene Terephthalate Glycol (PETG) granules (105). The polymer–PCB mixtures are prepared in compositions of PLA 74%, PETG 23%, PCB 3% and PLA 72%, PETG 22%, PCB 6% by weight. The blended material is dried in a hot air oven (107) at 90°C for 6–7 hours and subsequently extruded using a single-screw extruder (108) to form a continuous filament (109). The invention enables recycling and upscaling of PCB waste while producing stable, printable filaments compatible with conventional FDM 3D printing processes.

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
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(21) Application No.202631008077 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PROCESS FOR PREPARATION OF COCONUT SHELL DERIVED REDUCED GRAPHENE OXIDE INCORPORATED HAP-PMMA COMPOSITE BONE SCAFFOLDS

(51) International classification	:A61L 27/56, A61L 27/12, C01B 31/04, A61L 27/58, C01B 32/198
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)BARUA, Emon

(57) Abstract :
The present invention relates to a process for the preparation of reduced graphene oxide incorporated HAP–PMMA composite bone scaffolds. Coconut shell bio-waste is converted into graphite, oxidized into graphene oxide using the Improved Hummers' method, and thermally reduced to obtain reduced graphene oxide. Hydroxyapatite is synthesized by a wet chemical precipitation technique. Electrically conductive composite scaffolds incorporating reduced graphene oxide, hydroxyapatite, and polymethyl methacrylate are fabricated using a modified gas foaming technique with ammonium bicarbonate as a foaming agent. Scaffolds with varying reduced graphene oxide concentrations are developed and characterized for physicochemical, structural, mechanical, electrical, biodegradable, biocompatible, and bioactive properties. The reduced graphene oxide containing scaffolds show improved performance. The scaffold comprising 1 wt% reduced graphene oxide, 69 wt% hydroxyapatite, and 30 wt% polymethyl methacrylate exhibits superior compressive strength, electrical conductivity, porosity, biodegradability, and viability. The invention demonstrates sustainable utilization of coconut shell bio-waste and provides an electrically conductive composite scaffold.

No. of Pages : 33 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/01/2026
(21) Application No.202631008139 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : DECENTRALIZED WEB3-NATIVE AI LAYER FOR SELF-LEARNING SMART CONTRACTS AND TRUSTLESS AI VERIFICATION ON BLOCKCHAIN

(51) International classification	:H04L 9/06, G06Q 20/36, G06Q 20/38, H04L 9/32, G06N 3/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Soumya Ranjan Nayak
3)Ujjwal Sinha

(57) Abstract :
A decentralized Web3-native AI layer system (100) for delivering verifiable artificial intelligence services to blockchain-based decentralized applications. The system comprises a blockchain layer (102) for high-throughput AI operations, a utility token module (104) for token-gated feature access across basic, advanced, and premium tiers, a frontend application layer (106) with wallet connection and feature-gating interfaces, a hook and service layer (108) for balance checks and access control, a feature gate module (110) implementing deterministic token-gated access by comparing UTK balances against thresholds, a UTK balance check module (112) for on-chain balance verification, an AI services layer (114) comprising Web3-native AI modules including chatbot, auditor, NFT generator, trading assistant, and news AI, a self-learning smart contract module (116), an AI verification module (118) storing hashes and metadata on-chain for trustless verification, and a cross-chain optimization engine (120) for computing optimal routing strategies across multiple blockchain networks. (Fig. 1)

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/01/2026
(21) Application No.202631008210 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Predictive Analytics System for Employee Performance and Retention

(51) International classification	:G06Q 10/06, G06N 20/00, G06Q 10/10, G06Q 10/00, G06F 17/18
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Priyanka Pandey
2)Dr. Gagan Deep Chadha
3)Dr. Ashok Kumar Asthana
4)Dr. Abhishek Chauhan

(57) Abstract :
The current innovation is a Predictive Analytics System for Staff Performance and Retention. This system makes use of multi-dimensional workforce data and machine learning algorithms in order to evaluate staff productivity and anticipate issues with employee turnover. Performance measurements, attendance records, behavioral indications, feedback patterns, and HR records from the past are all included in the full data warehouse that the solution provides. A number of powerful prediction models, including sentiment analysis, clustering, classification, and regression, are utilized by the system in order to supply you with the most recent information, risk levels, and performance evaluations. A decision-support dashboard that presents these facts includes a variety of components, including interactive charts, trends, alarms, and suggestions, as well as individualized advice. Once this is accomplished, managers of human resources are able to make decisions that are both proactive and analytical based on the data. Through the use of this approach, continual staff development is facilitated, retention methods are improved, and evaluation bias is significantly mitigated. As a result of the solution's ability to translate raw HR data into exact predictive intelligence, both efficiency and production have been significantly improved. Keywords: Hybrid AI Model, Flood Forecasting, Physics-Informed Neural Network (PINN), Convolutional Vision Transformer (CViT), Shallow Water Equations (SWE), Real-Time Simulation, Hydrodynamic Modelling, Spatio-Temporal Prediction

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/01/2026

(21) Application No.202631008399 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Computer-Implemented Modular Mental-Health Clinical Decision-Support System with Hybrid Rule-and-Machine-Learning Inference and EMR/Telehealth Integration

(51) International classification	:G16H 10/20, G16H 50/20, G06N 5/04, G16H 40/20, G16H 50/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Dr. Ranjan Ghosh

(57) Abstract :
Computer-Implemented Modular Mental-Health Clinical Decision-Support System with Hybrid Rule-and-Machine-Learning Inference and EMR/Telehealth Integration A computer-implemented mental-health clinical decision-support system is disclosed for EMR-integrated assessment and triage. The system stores a library of machine-readable assessment modules, maintains an encounter state, receives encounter input data comprising item-level questionnaire responses and at least one of demographic/contextual data or EMR-derived clinical-history data, and derives feature representations. A module orchestration engine selects an initial module set and a next module based on predetermined policy rules. A hybrid inference stage combines deterministic rule outputs, including safety rules for high-risk states, with outputs of one or more trained machine-learning models using a precedence in which safety-rule outcomes override non-safety outcomes. The system generates a structured diagnostic-support data object comprising administered module identifiers, module-level results, an overall risk classification and a triage category and/or workflow-step recommendation for clinician review, and transmits the data object to an external EMR system via a secure interface using an encounter-linked idempotency key to prevent duplicate write-backs.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/01/2026
(21) Application No.202631008756 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR HEAT EXCHANGER DESIGN OPTIMIZATION USING DHOLE OPTIMIZATION ALGORITHM

(51) International classification	:G06F 17/50, G06F 119/08, G06F 30/20, G06F 30/28, G06F 30/17
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR HEAT EXCHANGER DESIGN OPTIMIZATION USING DHOLE OPTIMIZATION ALGORITHM A system (100) and method for heat exchanger design optimization using dhole optimization algorithm is disclosed. The system (100) comprises an input specifications module (102) configured to receive hot and cold fluid properties, flow arrangement configurations, and design constraints including minimum overall heat transfer coefficient, maximum pressure drop, and integer constraints for number of tubes. A mathematical modelling module (104) formulates objective functions including heat duty, logarithmic mean temperature difference, overall heat transfer coefficient, pressure drop calculations, heat transfer area, and total annual cost. An optimization and search engine (106) implements the dhole optimization algorithm to generate candidate design solutions with integer-handling mechanism and adaptive search behavior. An output optimal design module (108) delivers optimal heat exchanger geometry and best-performing total annual cost value. (Fig. 1)

No. of Pages : 23 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/01/2026

(21) Application No.202631008908 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : “AI-Based False Allegation Detection System (Men’s Safety)"

(51) International classification	:G10L 25/63, G10L 15/18, G06N 20/00, G10L 15/26, G10L 15/22
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)DR. SAYAN CHAKRABORTY
7)MR. SUBHADIP GOSWAMI
8)Mr.Abhisek Hazra
9)DR. ABHISEK ROY

(57) Abstract :
The present invention relates to an artificial intelligence–based system for contextual analysis of human conversations and secure generation of digital evidence. The system captures audio through a mobile or wearable device and converts the audio into textual data using speech recognition techniques. The textual data is analyzed by natural language processing models to identify indicators of sentiment, emotion, intent, consent, coercion, and manipulation within conversational contexts. Based on this analysis, the system flags relevant conversational segments and generates encrypted, time-stamped records to preserve authenticity and integrity. The system supports both active and passive monitoring modes, including automated activation upon detection of predefined risk indicators, and may incorporate cryptographic or blockchain-based mechanisms for tamper resistance. The invention provides a technological solution for producing reliable contextual conversational records suitable for legal, personal safety, and

No. of Pages : 19 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/01/2026
(21) Application No.202631009009 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LOW TEMPERATURE SYNTHESIS OF CERIUM-DOPED PYROCHLORE OXIDE

(51) International classification	:C09K 11/78, C09K 11/77, C09K 11/80, G21K 4/00, C09K 11/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)JAISWAL, Shivendra Kumar

(57) Abstract :
The present disclosure pertains to cerium-doped pyrochlore oxide having the formula $Gd_2(Zr_{2-x}Ce_x)O_7$, where the cerium doping concentration x ranges from 0 to 0.25 and a low-temperature and cost-effective sol-gel synthesis method for producing the same. Said $Gd_2(Zr_{2-x}Ce_x)O_7$ exhibits enhanced crystallinity, phase stability in the parent pyrochlore structure, and improved optical characteristics. The $Gd_2(Zr_{2-x}Ce_x)O_7$ synthesized according to the present disclosure is suitable for applications including phosphors, scintillators, optical thermometry devices, pressure sensors, thermal barrier and insulation coatings, and nuclear reactor and radiation-resistant components.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/01/2026
(21) Application No.202631009170 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : PYRIMIDINE-FUSED PYRROLOQUINAZOLINE COMPOUNDS FOR SELECTIVE FLUORIDE ION SENSING AND METAL-FREE PROCESS FOR PREPARING THE SAME

(51) International classification	:C07D 487/04, G01N 31/22, G01N 21/78, C09K 11/06, C07D 487/14
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to a process for synthesizing pyrimidine-fused pyrroloquinazoline compounds through a sunlight-induced intramolecular 6π-photocyclization reaction. The process is carried out without the use of metal catalysts, photocatalysts, oxidizing agents, or inert atmospheres and operates at ambient temperature and pressure. The synthesized pyrimidine-fused pyrroloquinazoline compounds exhibit selective sensing of fluoride anions over other halide ions, enabling reliable detection through distinct photophysical changes, and visible color variation. Thus, this disclosure encompasses the green synthesis, characterization and selective fluoride ion sensing study of pyrimidine-fused pyrroloquinazoline compounds.

No. of Pages : 30 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/01/2026
(21) Application No.202631009192 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A PROCESS FOR PREPARING A HERBAL FORMULATION WITH IMMUNOBOOSTING AND ANTIDIABETIC PROPERTIES

(51) International classification	:A61P 3/10, A61K 36/185, A61K 36/00, A61K 36/28, A61K 36/53
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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3)Dr. Debashree Kakati
4)Dr. Kishor Deka
5)Ms. Bishali Gogoi

(57) Abstract :
The present invention discloses a process for preparing a herbal formulation with immunoboosting and antidiabetic properties. The process includes collecting fresh, green, and undamaged medicinal plant materials from a plurality of plant species; cleaning the collected plant materials under running tap water, and drying to obtain dehydrated plant materials; grinding the dehydrated plant materials into fine powders and sieving the powder materials to obtain a uniform particle size; mixing the sieved powders in predetermined proportions to obtain a homogeneous herbal powder mixture; extracting the herbal powder mixture with methanol and water to obtain a methanolic extract and an aqueous extract; concentrating and drying both the methanolic extract and aqueous extract to obtain stable dried extracts; and formulating the dried extracts as a storage-stable herbal formulation capable of exhibiting antioxidant, immunoboosting, and antidiabetic activity.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/01/2026

(21) Application No.202631009323 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-Driven Global News Literacy Training System for Teachers

(51) International classification	:G06Q 50/20, G09B 5/06, G09B 5/08, G09B 7/00, G09B 5/14	(71)**Name of Applicant :** **1)Rahul Kumar Singh** Address of Applicant :Patna. Bihar Bihar India **2)Dr. Shardha Purohit** **3)Dr. Manju Kundu** **4)Dr. Palak Saxena**
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(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The invention relates to a system for generating professional development content for educators using real-time global media. It comprises a media aggregation engine that retrieves news, social, and broadcast content from international sources; an artificial intelligence module that evaluates credibility and detects bias; and a content generator that converts the analyzed media into structured training modules aligned with pedagogical goals. The system ensures that teachers have access to current, balanced, and classroom-ready global information without manual curation, enhancing their ability to foster media literacy and global awareness in students.

No. of Pages : 15 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/01/2026

(21) Application No.202631009425 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Customer Segmentation and Profiling System Using Machine Learning

(51) International classification	:G06N 20/00, G06Q 30/02, G06Q 10/06, G06Q 30/00, G06F 17/30
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract The present invention relates to a Customer Segmentation and Profiling System Using Machine Learning that enables automated, accurate, and dynamic analysis of customer data for improved business decision-making. The system is designed to process large volumes of heterogeneous customer data, including transactional, demographic, and behavioral information, to generate meaningful customer segments and detailed customer profiles. By employing advanced machine learning techniques, the invention overcomes the limitations of traditional, rule-based, and static segmentation approaches. The system integrates data from multiple sources into a unified analytical framework and applies automated data preprocessing and feature engineering to extract relevant customer attributes. Machine learning models are used to identify patterns, similarities, and trends within the data, enabling the formation of distinct customer segments and the creation of comprehensive customer profiles. The invention supports both descriptive and predictive analytics, allowing organizations to understand current customer behavior as well as anticipate future actions such as churn risk and customer lifetime value. A key aspect of the invention is its dynamic and continuous learning capability. As new customer data becomes available, the system automatically updates its models and segmentation results, ensuring that customer insights remain current and reflective of evolving behaviors. The invention also emphasizes scalability and interpretability, making it suitable for deployment in data-intensive environments while providing clear and actionable insights to business users. The Customer Segmentation and Profiling System Using Machine Learning is designed for seamless integration with existing customer relationship management and decision support systems. By enabling real-time or near-real-time insights, the invention enhances personalization, targeted marketing, customer retention, and strategic planning across various industries. Overall, the invention provides a comprehensive and intelligent solution for managing customer data, improving engagement, and supporting data-driven business strategies in complex and rapidly changing environments.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/01/2026
(21) Application No.202631009452 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : IoT-Enabled Solar Tracking System with Real-Time Monitoring and Predictive Maintenance for Efficient Power Generation

(51) International classification	:G06N 3/04, G06N 3/08, F24S 50/20, H02S 50/00, H02S 50/10	(71)**Name of Applicant :** **1)Ms Chinmayee Padhy** Address of Applicant :Ms Chinmayee Padhy Angel Investor, i-TBI@SOPHITORIUM, Sophitorium Engineering College, Khurda, Odisha cpadhy92383@gmail.com +91 92383 92780 Orissa India **2)Dr Himansu Mohan Padhy** **3)Dr. Pranati Mishra**
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(32) Priority Date	:NA	(72)**Name of Inventor :**
(33) Name of priority country	:NA	**1)Ms Chinmayee Padhy**
(86) International Application No	:	**2)Dr Himansu Mohan Padhy**
Filing Date	:01/01/1900	**3)Dr. Pranati Mishra**
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
ABSTRACT OF THE INVENTION: The invention introduces an innovative IoT-enabled solar tracking system designed to enhance power generation efficiency through dual-axis tracking, real-time monitoring, and predictive maintenance. In the face of fluctuating solar conditions, traditional systems underperform; this solution addresses that by integrating advanced sensors for data on irradiance, temperature, and mechanical health, transmitted via IoT to a cloud platform. Machine learning models, particularly LSTM networks, analyze this data to predict failures like panel degradation or motor issues, enabling proactive maintenance and reducing downtime by up to 50%. The system features adaptive algorithms that incorporate weather forecasts for optimal panel positioning, boosting energy capture by 25-35%. A user-friendly mobile interface provides dashboards for remote monitoring, alerts, and control, while blockchain ensures data integrity. Scalable for various applications, it supports smart grid integration for better energy management. A case study on a 10 kW installation demonstrated a 29% efficiency increase and significant cost savings. Novel aspects include sensor fusion with AI for precise predictions and real-time optimizations, surpassing prior art's limitations in reactivity and specialization. This invention promotes sustainable energy by minimizing losses and extending system lifespan, contributing to global renewable goals in diverse environments.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026
(21) Application No.202631009502 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND A METHOD FOR ADAPTIVE SOLAR-POWERED IRRIGATION AND WILDLIFE DETERRENCE USING CONTEXT-AWARE INTELLIGENT CONTROL IN FOREST AND TRIBAL AGRICULTURAL REGIONS

(51) International classification	:A01G 25/16, H02J 7/35, A01M 29/16, A01M 7/00, G05B 15/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(72)**Name of Inventor :**
1)Govind Yadav
2)Sandeep Kumar
3)Dr Arif Habib

(57) Abstract :
ABSTRACT A SYSTEM AND A METHOD FOR ADAPTIVE SOLAR-POWERED IRRIGATION AND WILDLIFE DETERRENCE USING CONTEXT-AWARE INTELLIGENT CONTROL IN FOREST AND TRIBAL AGRICULTURAL REGIONS The present disclosure relates to a system and a method for adaptive solar-powered irrigation and keeping animals away from crops in forests, tribal areas, and other remote agricultural areas. The system has a unit for collecting solar energy, a unit for storing energy, several units for sensing environmental and animal activity, an irrigation unit, a wildlife deterrence unit, and a processor that runs embedded control logic. The processor looks at sensor data in real time to figure out how much water stress the crops are under, whether animals are present, how much solar energy is available, and how to divide energy between irrigation and deterrence tasks. To stop animals from getting used to something, adaptive, non-repetitive deterrence patterns are made. At the same time, irrigation is controlled to make sure that groundwater stays healthy. The method lets things run on their own and uses less energy without needing electricity from the grid. This disclosure offers a technically advanced, integrated solution that boosts agricultural productivity, makes the best use of renewable energy, and protects wildlife in tough environmental conditions over the long term.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026
(21) Application No.202631009527 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR MULTI-AREA POWER SYSTEM STABILITY USING HAOADE-BASED PIDF-DS CONTROLLER

(51) International classification	:H02J3/0014, H02J3/001, H02J3/06, G05B11/42, G05B13/02, H02J103/35
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Gagan Deep Meena

(57) Abstract :
A system and method for multi-area power system stability using HAOADE-based PIDF-DS controller frequency regulation and inter-area power balance in a multi-area power system under dynamic cyber-physical uncertainties are disclosed. The system includes sensors for measuring frequency deviation and tie-line power deviation between interconnected power areas. A Proportional–Integral–Derivative with Filter (PIDF) controller generates a preliminary control signal while accounting for communication delays and cyber-attack-induced false data, ensuring stable closed-loop operation with reduced noise and oscillations. A Direct Synthesis (DS) design block compares actual system behavior with a desired closed-loop target and adjusts control action using a single tuning parameter (λ) and a set-point derivative weighting factor, enabling fast and smooth settling through a second-order stabilizing filter. An HAOADE engine (307) optimizes controller parameters by minimizing a time-weighted area-control-error criterion, thereby ensuring robust frequency regulation and inter-area power balance. (to be published with figure 2(b))

No. of Pages : 72 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026
(21) Application No.202631009591 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DUAL STAGE PIEZOELECTRIC ENERGY HARVESTER USING SELF-ACTUATED CONCENTRIC OVAL STRUCTURE

(51) International classification	:H02N2/18, H10N30/30, H10N30/85, H10N30/80, H02N2/18, H10N30/30, H10N30/85, H10N30/80
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. M. Prakash
3)Dr. B. Shakila
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(57) Abstract :
A DUAL STAGE PIEZOELECTRIC ENERGY HARVESTER USING SELF-ACTUATED CONCENTRIC OVAL STRUCTURE A dual-stage piezoelectric energy harvester using a self-actuated concentric oval structure was introduced. The device was designed to capture extra-low-frequency (ELF) ambient vibrations using a self-actuated concentric oval structure. A dual-stage cantilever was combined with a concentric oval resonator and an oval-shaped neodymium seismic mass to improve mechanical stress amplification and resonance tuning. A multilayer piezoelectric configuration enabled efficient electrical energy conversion, making the system well suited for wearable electronics, biomedical devices, and IoT-based applications. Fig 13

No. of Pages : 24 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026
(21) Application No.202631009709 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ARTIFICIAL INTELLIGENCE BASED DIGITAL MICROBIOLOGY ANALYTICS HELPDESK DEVICE

(51) International classification	:G16H 50/20, G06N 3/08, G06N 3/04, G16H 50/70, G16H 10/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an artificial intelligence based digital microbiology analytics helpdesk device (100) integrating deep learning image analysis with natural language processing for clinical microbiology laboratory support. The device (100) comprises an image acquisition module (120) with camera (121), illumination system (122), and sample stage (123) for capturing culture plate images; an AI engine (110) incorporating a deep learning module (111) for colony detection, enumeration, and bacterial classification, a natural language processing module (112) for processing user queries, and a decision engine (113) for integrated analysis; a knowledge base (140) with database (141) and protocol library (142); a chatbot interface (150) for interactive helpdesk assistance; and a report generation module (160). The device (100) enables automated analysis of microbiology cultures while providing context-aware conversational support for laboratory personnel through the integration of convolutional neural networks trained on diverse culture plate images with domain-specific NLP capabilities, thereby reducing turnaround time and improving diagnostic consistency.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026
(21) Application No.202631009729 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SYSTEM AND METHOD FOR FLOOD HAZARD PREDICTION AND SENSOR DEPLOYMENT GUIDANCE

(51) International classification	:G06N 3/04, G06N 3/08, G06V 20/13, G06V 10/764, G06K 9/62
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)GHOSH, Rajib

(57) Abstract :
The present invention discloses a system (100) and a method for early prediction of flood-related hazards and guiding sensor deployment. The system (100) includes a processor, memory, and functional modules comprising an input module for receiving georeferenced satellite images (101), metadata, and Digital Elevation Model (DEM) data (102), a pre-processing module (103), and a feature extraction module (104) using Mask R-CNN to identify flood-relevant terrain and water-related features. An adaptable model selection and inference unit (105) analyzes the extracted data using at least one of a pre-trained Recurrent Neural Network (RNN) classifier or a GIS-based model and fuses their outputs to generate robust flood risk predictions. A risk map production and visualization module (106) categorizes flood-prone and sediment-prone areas. A sensor deployment module (107) provides adaptive, energy-efficient sensor placement, while a continuous monitoring and adaptive feedback module updates risk maps using real-time sensor data, enabling an end-to-end flood-risk management process. (to be published with figure 1)

No. of Pages : 24 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026
(21) Application No.202631009742 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : SMART STETHOSCOPE WITH DETACHABLE MAGNETIC DOCKING ECG ELECTRODES

(51) International classification	:A61B 7/04, A61B 7/00, A61B 5/00, A61B 7/02, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure provides a smart stethoscope apparatus that includes a chest piece configured to capture acoustic heart sounds from a patient, the chest piece having an acoustic sensor. The apparatus includes a plurality of detachable ECG electrodes configured to record cardiac electrical activity from the patient, each detachable ECG electrode being removable from and attachable to the chest piece. A magnetic docking mechanism has magnetic contacts disposed on the chest piece and corresponding magnetic contacts disposed on each of the plurality of detachable ECG electrodes, the magnetic docking mechanism enabling secure yet releasable attachment of the detachable ECG electrodes to the chest piece, wherein the detachable ECG electrodes are repositionable at various anatomical locations for multi-lead ECG acquisition. Acoustic tubing is connected to the chest piece and extends to ear pieces for delivering the acoustic heart sounds to a clinician. (Fig. 1)

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026
(21) Application No.202631009906 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AN APPARATUS FOR PREPARING FAECAL SAMPLES FOR MICROSCOPIC EXAMINATION, AND A METHOD THEREOF

(51) International classification	:G01N 1/28, G01N 1/40, B04B 5/04, B01L 3/00, G01N 33/48
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)SAMANTA, Sudipta

(57) Abstract :
The present disclosure provides an apparatus (100) for preparing faecal samples for microscopic examination, and a method (900) thereof. The apparatus (100) comprises a sample holder (102) configured to receive a faecal sample, an ultrasonic vibration generator coupled to the sample holder (102), and a motor (106) configured to rotate the sample holder (102) to enable centrifugal separation of the faecal sample. The apparatus (100) comprises at least two sieve filters (616) arranged within the sample holder (102) to retain objects of interest during the centrifugal separation, and a viewing region (618) in the sample holder (102) configured to be imaged by a microscope. The apparatus (100) is configured to prepare and image the faecal sample within the same sample holder (102) without requiring transfer of the faecal sample to another vessel. The ultrasonic vibration generator comprises one or more piezo-ceramic actuators (108) mounted on a rotatable shaft (104).

No. of Pages : 53 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026

(21) Application No.202631010187 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : "AI-Powered Adaptive Charging System Based on User Routine & Battery Health"

(51) International classification	:H02J 7/00, G06N 20/00, H01M 10/44, H02J 7/04, G01R 31/389
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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7)DR. SAYAN CHAKRABORTY
8)Mr. Abhisek Hazra
9)DR. ABHISEK ROY

(57) Abstract :
The present invention relates to an AI-powered adaptive charging system for rechargeable batteries in electronic devices, such as smartphones, laptops, tablets, and wearable devices. The system intelligently monitors battery health parameters, including capacity, internal resistance, and charge cycles, and learns user charging habits and device usage patterns using machine learning algorithms. Based on predicted unplug times and real-time battery diagnostics, the system dynamically controls the charging process by rapidly charging to an intermediate safe threshold, pausing charging, and resuming to reach full capacity just before the device is expected to be used. This adaptive approach prevents overcharging, reduces thermal stress, and prolongs battery lifespan. The system can operate offline, provides optional user notifications, allows manual overrides, and can be implemented as firmware, an operating system module, or integrated with the device's existing battery management system. The invention provides a personalized, intelligent, and sustainable solution for optimizing battery performance and longevity.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026
(21) Application No.202631010208 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : " Low-Cost AI-Powered Skin Disease Scanner for Rural Area "

(51) International classification	:A61B 5/00, G16H 50/20, G16H 30/40, G06N 3/04, G06N 3/08	(71)**Name of Applicant :** **1)JIS COLLEGE OF ENGINEERING** Address of Applicant :Block A, Phase III, Dist. Nadia, Kalyani, West Bengal- 741235 Kalyani West Bengal India (72)**Name of Inventor :** **1)HARSH KUMAR GUPTA** **2)ISTAKBAL HUSSAIN** **3)ADITYA THAKUR** **4)DR. SITANATH BISWAS** **5)MRS. SASWATI RAKSHIT** **6)DR. ABHISEK ROY** **7)Mr. Abhisek Hazra** **8)MR. SUBHADIP GOSWAMI** **9)DR. SAYAN CHAKRABORTY**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
The present invention discloses a low-cost, AI-powered skin disease scanning system intended for use in rural and medically underserved areas. The system operates on a standard smartphone and employs an on-device, lightweight convolutional neural network (CNN) to analyze images of human skin captured using the smartphone camera. Advanced image preprocessing techniques are utilized to enhance image quality under suboptimal conditions such as poor lighting and noise. The system performs disease classification entirely offline and provides real-time diagnostic confidence scores along with preliminary treatment or referral guidance. By eliminating dependence on internet connectivity and specialized medical equipment, the invention enables accessible, portable, and scalable dermatological screening, empowering non-specialist healthcare workers to facilitate early detection and improved healthcare delivery in resource-limited settings.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/01/2026
(21) Application No.202631010224 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A COMPUTER-IMPLEMENTED SYSTEM AND METHOD FOR ADAPTIVE MARKET DEMAND ALLOCATION, MULTI-ROLE ORDER PROPAGATION, AND REAL-TIME PERFORMANCE ANALYTICS IN A COMPETITIVE SUPPLY CHAIN SIMULATION ENVIRONMENT

(51) International classification	:G06Q 10/06, G06Q 10/08, G06Q 10/04, G06Q 30/02, G06Q 10/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Pratul Kumar

(57) Abstract :
The present invention relates to a computer-implemented system and method for simulating and analyzing multi-tier supply chain operations in a competitive environment. The system dynamically allocates market demand across multiple parallel supply chain teams using uniform or performance-responsive allocation logic, propagates demand upstream across hierarchical roles including retailer, wholesaler, distributor, and manufacturer, and models delayed supply through multi-stage transit pipelines. Role-specific cost parameters, backlog accumulation, and production-driven manufacturing logic are incorporated to reflect realistic operational behavior. The system further computes real-time performance analytics including service level, cumulative cost, and order variability, enabling comparative evaluation of strategies, improved decision transparency, and enhanced understanding of systemic inefficiencies in complex supply chain environments. Accompanied Drawing [FIGS. 1-4]

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/01/2026
(21) Application No.202631010277 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ADVANCED MACHINE LEARNING APPROACHES FOR SOIL TYPE CLASSIFICATION IN PRECISION AGRICULTURE

(51) International classification	:G06V 10/764, G06N 20/00, G06K 9/62, G06V 10/774, G06K 9/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a computer-implemented system and method for automated soil classification and crop-specific nutrient recommendation using machine learning and image processing techniques. The system employs soil image acquisition followed by preprocessing, feature extraction, and classification using supervised learning algorithms, including Gradient Boosting and Support Vector Machines. Unlike conventional soil analysis methods that rely on time-consuming laboratory testing and expert interpretation, the proposed approach provides rapid, data-driven soil assessment based on visual characteristics such as soil texture and color. The classified soil type is mapped to a crop and nutrient recommendation database to determine optimal cultivation conditions, with particular emphasis on tea and coffee crops. The system enhances precision agriculture by reducing manual intervention, improving classification accuracy, and optimizing resource allocation. The invention further supports scalability and sustainability in agriculture and enables future integration with IoT sensors, satellite imagery, and advanced deep learning models for real-time and adaptive soil management.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/02/2026
(21) Application No.202631010500 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Predictive Analytics System and Method for Machine Learning-Based Real-Time Surgical Support

(51) International classification	:A61B 5/00, G16H 50/20, G16H 40/67, G16H 40/63, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract This invention addresses the critical need for proactive monitoring in surgical environments. While traditional systems only show raw vitals, this machine learning-based system integrates multi-modal data (vitals and video) to provide a predictive analytics dashboard. By identifying potential complications before they occur, the system reduces the cognitive load on surgeons and bridges the technical gap in "future-state" surgical analysis. The prototype facilitates automated recording and real-time risk alerts protected by supervisory protocols, making surgery safer and more effective.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010597 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LEAD-FREE Cs2SnI6 DOUBLE PEROVSKITE-BASED FLEXIBLE RESISTIVE SWITCHING MEMORY DEVICE AND ITS FABRICATION METHOD THEREOF

(51) International classification	:H01L 45/00, H01L 51/00, H01L 51/05, H01L 27/24, H01L 51/40
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Ms Shraboni Roy

(57) Abstract :
The present invention discloses a lead-free Cs_2SnI_6 double perovskite-based flexible resistive switching memory device (200) and its fabrication method thereof. The method involves dissolving 0.45-0.65 gm of cesium iodide (CsI) and 0.55-0.75 gm of tin (IV) iodide (SnI_4) in 2-5 ml of acetonitrile (ACN) solvent, followed by ultrasonication, magnetic stirring, and heating to synthesize Cs_2SnI_6 powder, which is subsequently dissolved in DMF to form a coating solution. The coating is spin-coated onto an indium tin oxide (ITO) coated polyethylene terephthalate (PET) substrate (202) and annealed to form a uniform perovskite layer (204). An aluminum (Al) top electrode (206) is deposited by thermal evaporation to complete the device structure. The fabricated Al/Cs_2SnI_6/ITO-PET device (200) exhibits stable bipolar RS behavior with a high ON/OFF ratio (~10^3), excellent retention (10^4 s), and mechanical flexibility.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010712 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INSTANTANEOUS RAKE LOADING SYSTEM (IRLS) - SIMULTANEOUS STATIONARY RAILWAY RAKE LOADING USING ELEVATED STATIC PRE-WEIGH BINS

(51) International classification	:G01G 19/08, G01G 19/04, G01G 19/03, G01G 11/00, B65G 67/60
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to an Instantaneous Rake Loading System (IRLS) developed for fast, accurate, and operationally simple loading of bulk material into railway wagons (501). Conventional mechanised systems rely on travelling wagon loaders or sequential loading under locomotive creep motion, both of which involve dynamic weighing, longer loading times, and higher operational dependency. The IRLS eliminates these limitations by adopting static pre weighment (402) and stationary whole rake loading. The system comprises multiple static pre weigh bins (401) mounted on an elevated platform (102) above the railway track (504), each corresponding to a wagon (501) and designed to store material equal to its rated capacity. These bins (401) are pre loaded independently through an elevated conveyor (301) with travelling tripper (201) and boom arrangement (203), decoupling feeding and weighing from the loading stage. When a rake is positioned beneath the bins (401), a single command actuates hydraulic discharge gates (403), releasing material simultaneously into all wagons (501). This enables complete rake loading in less than one minute, ensuring high accuracy, reduced operational complexity, and improved reliability compared to conventional rapid wagon loading systems. Figure. 1

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010859 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI-DRIVEN AND IOT ENABLED FRAMEWORK FOR PREDICTIVE MAINTENANCE AND REAL TIME MONITORING OF SOLAR PV SYSTEMS

(51) International classification	:H02S 50/00, H02S 50/10, H02J 3/38, H02J 13/00, G06N 20/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Mr. Subham Sharma
5)Mr. Sudhanshu Prakash

(57) Abstract :
The present invention relates to an artificial intelligence-driven and Internet of Things (IoT) enabled framework for predictive maintenance and real-time monitoring of grid-integrated solar photovoltaic (PV) systems. Specifically, the invention provides a comprehensive system architecture that integrates low-cost microcontroller-based sensor networks with advanced machine learning algorithms to enable continuous performance monitoring, early fault detection, and predictive maintenance of solar energy generation systems. The system employs an ESP32 microcontroller interfaced with specialized sensors for real-time data acquisition of critical parameters including voltage, current, temperature, and battery status across the solar installation. A LoRa (Long Range) communication module facilitates wireless transmission of collected data from remote solar panel locations to a centralized monitoring station. The acquired data is processed using ensemble and hybrid machine learning models to forecast system faults and detect defects before they impact system performance. Cloud-based dashboards provide scalable, remote visualization and analysis capabilities, while continuous learning mechanisms update predictive models through real-time feedback loops. The invention enables predictive detection of multiple fault types including soiling, inverter malfunctions, panel degradation, shading effects, and battery aging, thereby improving system reliability, efficiency, and operational sustainability.

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010860 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LOAD FREQUENCY CONTROL BY SPEED GOVERNORS OF TWOAREA POWER SYSTEM USING DIGITAL CONTROLLER WITH DEADBEAT APPROACH

(51) International classification	:H02J3/0014, H02J3/06, H02J103/35
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Dr. Asutosh Patnaik

(57) Abstract :
This invention relates to Load Frequency Control (LFC) in two-area interconnected power systems utilizing digital controllers with deadbeat approach. The present invention addresses the critical problem of limit cycles (LC) caused by governor backlash nonlinearities, which degrade power system stability and performance. Conventional LFC schemes using traditional governors suffer from self-sustained oscillations that threaten grid stability and operational reliability. The Digital Deadbeat Controller (DDC) formulated and implemented herein provides an instantaneous response at t=0 that is completely transient-free, ripple-free, and exhibits zero steady-state error. This revolutionary approach enables real-time application in LFC schemes, ensuring effective grid regulation and maintaining power system stability within minimum possible time. The deadbeat controller eliminates the requirement for steady-state error elimination, provides perfect command tracking, and eliminates the effects of constant disturbances with finite settling time. The implementation of DDC in LFC scheme represents the first-time application of this approach in the existing literature, demonstrating superior performance metrics including faster response time, better transient response, improved stability margins, and enhanced overall system reliability. Simulation results validate the effectiveness of the proposed approach in suppressing limit cycles and maintaining frequency stability in two-area power systems

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026

(21) Application No.202631010861 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : ENZYME-IMMOBILIZATION ON AGROWASTE-DERIVED HYDROGEL COMPOSITES FOR HEAVY METAL REMOVAL FROM SURFACE WATER

(51) International classification	:C02F 1/72, C02F 3/34, B09C 1/10, C02F 101/20, B09C 1/08
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Subhasmita Sahoo

(57) Abstract :
The present invention discloses a biocompatible hydrogel composite material and its green synthesis methodology for simultaneous removal of heavy metal ions and organic pollutants from contaminated surface and groundwater. The composite comprises nanocrystalline cellulose (NCC) derived from coconut coir agrowaste, dual-metal coordination nodes containing iron (Fe^{2+}/Fe^{3+}) and copper (Cu^{+}/Cu^{2+}) ions functioning as catalytic centers, and immobilized oxidative enzymes (laccase and peroxidase) for enzymatic biodegradation. The material operates through a synergistic triple-action mechanism: (i) physisorption of pollutants onto NCC hydroxyl and carboxyl functional groups, (ii) heterogeneous Fenton-like catalytic oxidation via Fe-Cu redox cycling, and (iii) enzymatic oxidative degradation of organic contaminants. The green synthesis employs saltfree, aqueous processing without toxic organic solvents, achieving 90% heavy metal and organic pollutant removal within 30-60 minutes with ≥70% enzyme activity retention over 10 regeneration cycles. The hydrogel demonstrates zero secondary sludge generation, superior reusability compared to conventional activated carbon and ion-exchange resins, and cost-effectiveness at approximately INR 200-250 per kilogram. This innovation addresses critical water quality challenges in industrial regions of India and developing nations, particularly benefiting alumina refineries, steel mills, textile industries, mining operations, and municipal water treatment facilities pursuing sustainable, biodegradable remediation solutions.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026

(21) Application No.202631010862 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : MULTI-LAYERED CYBERSECURITY INTEGRATING LLM THREAT PREDICTION, EPHEMERAL CRYPTO AUTHENTICATION, AND TAMPER-EVIDENT DISTRIBUTED ANOMALY LEDGER FOR PROACTIVE SECURITY OPERATIONS

(51) International classification	:G06N 3/04, G06N 3/08, H04L 29/06, H04L 9/40, G06F 21/57
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Soujanya Pandia
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5)Dhananjay
6)Dr. Ram Chandra Barik

(57) Abstract :
VectorVault presents an innovative cybersecurity architecture that fundamentally transforms defense from reactive to proactive through the integration of two core indigenous frameworks: the Predictive Event Anomaly Recorder (P.E.A.R) Engine and the Advanced Security & Token-Based Rotating Authentication (A.S.T.R.A) Framework. The P.E.A.R Engine operates as an anti-causal inference mechanism that analyzes preceding data behavior to forecast security anomalies before they manifest, utilizing a Bi-nodal topography comprising a Real-Time Ingestion (RTI) Node and a Predictive Ingestion (PI) Node. The engine employs neural deviation analysis through CUDAaccelerated CNN-LSTM pipelines combined with Ground Deviation Modules (GDM) and Volume Deviation Modules (VDM) to automatically isolate and neutralize malicious payloads within pseudo-server trapping mechanisms without impacting live systems. The A.S.T.R.A Framework revolutionizes authentication by introducing ephemeral, daily-rotating credentials through a hardened multi-stage cryptographic pipeline incorporating HMAC-SHA256 pre-hashing, PBKDF2 CPU-cost slowdown, ShuffleRoleByte cryptographic role-binding, MFA-HMAC mathematical binding, and Argon2id memory-hard resistance. This framework eliminates the static credential vulnerability inherent in traditional authentication systems, rendering stolen password hashes cryptographically invalid within 24 hours and preventing privilege escalation attacks at the credential level through role-embedded cryptography. The integrated system achieves autonomous threat isolation, continuous self-learning through reinforcement feedback loops, and tamper-evident auditing via an immutable Agentic Ledger employing Merkle-tree hash chaining. Hardware integration includes FIPS 140-3 compliant HSMs for key custody, TPM 2.0 modules for secure boot, FPGA cryptographic accelerators for sub-millisecond encryption, and GPS-NTP appliances for tamper-evident timestamps. Performance benchmarks demonstrate sustained throughput of 1.2 million events per second, neural response latency below 50 milliseconds, authentication cycle completion in 431 milliseconds, and 99.99% operational uptime with zero-downtime failover capabilities. The architecture supports elastic scalability across small, medium, and enterprise deployments while maintaining identical security postures and compliance with ISO 27001, NIST 800-53, FIPS 140-3, and SOC 2 standards, establishing a self-sustaining digital immune system capable of autonomous prediction, prevention, and self-healing without human dependency.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010863 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : BALAK AI: A Multimodal Indian Child-Centric AI Bot Conjugating Mythological RAG, OCR Interpretation and Rhyme TTS Narration

(51) International classification	:G09B 19/06, G09B 5/06, G09B 7/04, G09B 7/02, G09B 7/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)Arnav Chauhan
3)Piyush Kumar Modi
4)Soumik Dutta
5)Nulu Ritika

(57) Abstract :
BALAK AI is an innovative, integrated artificial intelligence system designed specifically for child-centric educational learning that uniquely combines Retrieval-Augmented Generation (RAG) with Optical Character Recognition (OCR), Text-to-Speech (TTS) synthesis, and childidentity verification mechanisms within a unified multimodal platform. The invention addresses critical gaps in existing digital learning systems by delivering culturally aligned mythology education, structured academic learning, region-specific rhymes with precise phonetic accuracy, and secure child-safe interactions—all features not comprehensively combined in any prior art solution. The system employs locally-hosted Large Language Models (LLMs) integrated with FAISS-based vector databases to ensure hallucination-controlled, factually verified responses, while its OCR module automatically evaluates handwritten or textual academic responses using deep-learning architectures comprising DBNet for region segmentation and CRNN for sequential text recognition. The multimodal processing framework accepts text, image, and audio inputs while generating validated, age-appropriate learning outputs through coordinated LLM reasoning, vector retrieval, OCR evaluation, and phonetic TTS synthesis in Hindi, English, and Hinglish. Child-identity verification using secure user profiling ensures safe operation for intended age groups, making BALAK AI a comprehensive, intelligent, and context-aware solution for young learners, educational institutions, parents, and EdTech platforms seeking adaptive, personalized, and culturally sensitive learning experiences.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026

(21) Application No.202631010864 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A DEEP LEARNING–BASED ON PRECODING AND COMPANDING IN MULTI-USER MASSIVE MIMO-OFDM SYSTEMS FOR PAPR SUPPRESSION

(51) International classification	:H04L 27/26, G06N 3/04, G06N 3/08, H04B 7/0456, H04B 7/06
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Jagannath Dayal Pradhan
4)Dr. Pushpendra Kumar Gupta
5)Dr. Soumya Mishra

(57) Abstract :
The present invention relates to a novel deep learning-based framework for simultaneous optimization of precoding and companding in multi-user massive MIMO-OFDM wireless communication systems, specifically designed to suppress Peak-to-Average Power Ratio (PAPR) while enhancing spectral efficiency and power amplifier efficiency. Traditional approaches handle precoding and companding separately, resulting in suboptimal performance and inherent trade-offs between signal quality and power efficiency. The invention introduces a unified neural network architecture that jointly learns and optimizes both precoding weights and adaptive per-user/perantenna companding parameters by training on realistic channel state information, OFDM signal characteristics, and power amplifier nonlinearity models. The method incorporates physics-aware differentiable signal processing layers including IFFT and PA nonlinearity models within the neural network training loop, enabling end-to-end gradient-based optimization of time-domain PAPR, spectral regrowth, and bit-error rate simultaneously. The architecture supports hardwarefriendly deployment on FPGA, ASIC, and DSP platforms suitable for 5G/6G base stations, enabling real-time inference with minimal computational overhead. Experimental validation demonstrates significant improvements in PAPR reduction, BER performance, and power efficiency compared to conventional separate precoding and companding techniques, while maintaining user fairness and constellation integrity across multi-user scenarios. The invention is particularly valuable for dense wireless networks where power amplifier back-off limitations and multi-user interference pose critical performance bottlenecks.

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010865 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : OBJECT DETECTION USING ASSISTIVE NAVIGATION FOR VISUALLY IMPAIRED PERSON

(51) International classification	:A61H 3/06, G01S 15/931, G01S 15/86, G01S 5/18, G01C 21/20
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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3)Dr. Ram Chandra Barik
4)Prof. (Dr.) Ganapati Panda
5)Dr. Adyasha Rath
6)Dr. Surendra Kumar Panda

(57) Abstract :
The present invention relates to an assistive wearable navigation device designed specifically to aid visually impaired and blind individuals in detecting obstacles and navigating safely through their surroundings. More particularly, the invention pertains to a microcontroller-based ultrasonic obstacle detection system integrated into a portable wearable belt that provides real-time feedback through audio and haptic vibration alerts. The Navigative Belt comprises a microcontroller unit, multiple ultrasonic sensors for distance measurement, a camera module for object recognition using advanced computer vision algorithms, a GPS module for location tracking in outdoor environments, and a battery-powered power management system. The device operates by continuously capturing environmental data through sensors and processing this information using a sophisticated decision logic algorithm that evaluates the proximity and nature of detected obstacles. Upon detecting an obstacle within a critical distance threshold, the system immediately generates multi-modal feedback through buzzer alerts and vibration motors, providing haptic and audio cues to guide the user toward safe navigation paths. The invention is particularly distinguished by its low-cost, lightweight, and portable nature compared to existing assistive navigation technologies, making it economically accessible to a broader population of visually impaired individuals. The device can be seamlessly integrated with smartphone applications for enhanced functionality, real-time navigation guidance, and machine learning updates that continuously improve obstacle recognition capabilities. The wearable form factor, combined with hands-free operation and real-time processing capabilities, makes this invention a significant advancement in assistive technology for the blind and visually impaired community.

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010866 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : LOCALIZED THERMAL GRADIENT REACTOR FOR ADDITIVE-FREE HYDROTHERMAL GROWTH OF HIGHASPECT RATIO NANOSTRUCTURES

(51) International classification	:C01G 9/02, B82B 3/00, B01J 19/24, B01J 19/00, C01G 9/03
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Dr. Surya Prakash Ghosh
2)Dr. Jyoti Prakash Kar

(57) Abstract :
The present invention relates to a localized thermal gradient reactor and process for additive-free hydrothermal synthesis of high-aspect-ratio nanostructures, particularly applicable to metal oxides such as zinc oxide (ZnO) and other functional nanomaterials. The invention specifically addresses the limitations of conventional hydrothermal systems, which suffer from inefficient precursor utilization, rapid depletion of reactive species near the substrate, and reliance on chemical additives or surfactants to achieve extended nanostructure growth. The reactor comprises a borosilicate glass vessel in which only a limited upper volume (approximately 4-6% of total volume) is selectively heated using an external localized heating element under precise PID temperature control, while the bulk solution remains at a lower temperature. This configuration establishes a stable vertical thermal gradient that naturally drives continuous convection and diffusion of precursor ions from the cooler bulk region toward the heated growth region. The substrate, positioned within the heated limited-volume zone using a Teflon holder, benefits from continuous replenishment of fresh reactive species without requiring external pumping or mechanical stirring. The thermal-gradientdriven mass transport mechanism enables prolonged nanostructure growth (5-30 hours) with significantly improved length and uniformity, reduced energy consumption (60-70% savings), complete elimination of chemical additives, and minimal precursor wastage. The invention is not limited to ZnO and can be extended to other metal oxides, chalcogenides, and functional nanomaterials, making it highly applicable in research laboratories, semiconductor manufacturing, sensor fabrication, and advanced materials industries.

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010867 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : AI ENABLED VOICE ASSISTANCE BASED FUTURE GENERATION LIBRARY MANAGEMENT SYSTEM

(51) International classification	:H01L 51/05, G06N 3/063, H01L 51/00, H01L 51/10, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Dr. Madhusmita Sahu
5)Dr. Mamtarani Das
6)Prof. (Dr.) Sukant Kishoro Bisoy

(57) Abstract :
The present invention relates to a novel flexible ferroelectric-coupled transistor (FeFET) based retinomorphic device designed for artificial intelligence optoelectronic applications. Specifically, the invention comprises an integrated optoelectronic system combining light-sensing capabilities, memory storage, and neuromorphic computing functionalities within a single flexible field-effect transistor device. The device integrates an optically active organic semiconductor layer (DNTT) with a ferroelectric polymer dielectric layer (P(VDF-TrFE)) and metal contacts, enabling simultaneous visual perception and information processing. The fabricated FeFET device operates at reduced voltage levels and demonstrates multi-level analog weight storage capability, making it suitable for neuromorphic computing applications such as pattern recognition and feature detection. A 5×5 crossbar array architecture of FeFET synaptic devices is implemented as a singlelayer perceptron neural network to emulate biological visual perception processes including retinal signal reception, optical nerve transmission, and cortical signal processing with memorization. The invention addresses the limitations of conventional separated sensor, memory, and processing unit architectures by providing an integrated in-memory sensing and computing platform. The solution significantly reduces circuit complexity, processing latency, power consumption, and thermal challenges while enabling flexible device implementation. The fabrication methodology utilizes solution-processable materials and thermally grown dielectric layers, offering economical production with ease of fabrication. The invention finds applications in IoT devices, artificial intelligence systems, edge computing platforms, and neuromorphic computing architectures requiring efficient visual perception and processing capabilities.

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010868 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : INTELLIGENT GAMIFIED LEARNING INFRASTRUCTURE USING ADAPTIVE GAMEPLAY FOR CONSTITUTIONAL AND CIVIC LITERACY

(51) International classification	:G06Q 50/18, G06Q 50/20, G09B 19/00, A63F 13/65, A63F 13/798
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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7)Dr. Ram Chandra Barik

(57) Abstract :
The present invention relates to an intelligent gamified learning infrastructure designed to impart constitutional, legal, and civic education through interactive gameplay and adaptive learning mechanisms. Specifically, the invention provides a software-based platform that integrates mission-based gamification, scenario-driven civic learning, and AI-assisted legal prediction systems to enhance user engagement and knowledge retention in constitutional domains. The system comprises an interactive role-based gameplay module allowing users to participate in simulated legal and governance scenarios, a legal knowledge content module embedding constitutional provisions and statutory sections, a decision-based branching logic engine implemented through C# gameplay scripts, and a reward-driven engagement mechanism featuring badges, achievements, and leaderboard rankings. The invention further includes an AI/MLassisted legal interpretation framework configured to analyze in-game situations, classify scenarios against pre-trained legal datasets, and predict applicable constitutional articles and fundamental rights relevant to user decisions. The platform dynamically adapts to player performance through machine learning models trained on curated legal, civic, and constitutional datasets, adjusting difficulty levels and recommending relevant missions in real-time. Unlike existing static educational applications or generic quiz-based tools, this invention combines experiential game-based learning with structured legal knowledge modules to simplify constitutional education and significantly improve the efficiency and effectiveness of civic literacy. The system is designed for diverse user demographics including students, educational institutions, government bodies, and the general public, providing an immersive platform that transforms traditional text-heavy civics education into an engaging, interactive, and adaptive learning experience.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631010906 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : A SYSTEM AND A METHOD TO OBJECTIVELY CLASSIFY YOGASANAS AND DETERMINE THEIR PHYSIOLOGICAL MECHANISMS USING MULTIMODAL BIOSENSING AND ADAPTIVE INTELLIGENCE

(51) International classification	:A63B 24/00, A61B 5/00, A61B 5/11, A63B 71/06, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(72)**Name of Inventor :**
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(57) Abstract :
ABSTRACT A SYSTEM AND A METHOD TO OBJECTIVELY CLASSIFY YOGASANAS AND DETERMINE THEIR PHYSIOLOGICAL MECHANISMS USING MULTIMODAL BIOSENSING AND ADAPTIVE INTELLIGENCE The present disclosure relates to a system and a method for objective physiological classification and adaptive analysis of yogasanas. The system has multimodal biosensing units that can pick up physiological signals from a user during yogasana practice. These signals include neuromuscular activity, motion data, neural signals, autonomic response parameters, and breathing patterns. One or more processors process the signals that were received, find physiological features that are specific to the posture, and create physiological signatures that are specific to the yogasana. The system uses the generated signatures to group yogasanas by their underlying physiological mechanisms. It then gives real-time, adaptive guidance on how to do the poses and how to coordinate breathing. The method also allows for ongoing improvement of yogasana practice by using closed-loop feedback and storing physiological data for long-term study and therapeutic evaluation. The system and method described change yogasana practice from a subjective, observation-based activity into a measurable, repeatable, and mechanism-driven physiological process. This makes it possible for standardized use in healthcare, rehabilitation, wellness monitoring, and technology-assisted therapeutic applications.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026

(21) Application No.202631011027 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : Herbal Nanogel Formulation for Periodontal Therapy

(51) International classification	:A61K 36/9066, A61K 9/00, A61P 1/02, A61K 36/00, A61K 36/185
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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2)MOHAPATRA, Arpita

(57) Abstract :
A herbal nanogel formulation for periodontal therapy comprising aqueous extracts of Curcuma longa, Azadirachta indica, and Camellia sinensis encapsulated within biodegradable nanocarriers selected from chitosan nanoparticles or poly-lactic-co-glycolic acid nanoparticles, suspended in a mucoadhesive gel matrix comprising Carbopol or hydroxypropyl methylcellulose. The nanoparticles are prepared by ionic gelation with sodium tripolyphosphate and exhibit a size range of 50 to 150 nanometers with a zeta potential of +25 to +35 millivolts. The formulation is pH-adjusted to 6.5 to 7.0 using triethanolamine and includes natural stabilizers such as citric acid or propylene glycol. The nanogel provides sustained drug release extending up to 10 days, enhanced penetration into periodontal tissues, dual antimicrobial and anti-inflammatory action, and prolonged retention at the application site. A method of preparation is also disclosed. (Fig.1)

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/02/2026
(21) Application No.202631011035 A
(43) Publication Date : 06/02/2026

(54) Title of the invention : An Automatic Mine Cage Free-Fall Arresting Safety System

(51) International classification	:B66B 5/12, B66B 5/18, B66B 5/26, B66B 5/24, B66B 5/02
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a modified suspension gear and mine cage safety system for arresting the free fall of a mine cage in the event of detachment of the winding rope. The system comprises a triangular suspension plate connected to the winding rope, a rectangular base plate welded thereto, adjustable screws, tensional springs, lifting wire ropes, and a plurality of fulcrum mechanisms mounted on a modified flat cage roof. Each fulcrum is operatively connected at its rear end to the suspension gear and at its front end to a cage guide arrester selected from clamp holder arresters, claw fork arresters, or roller wheel arresters, depending on the type of cage guide. Upon detachment of the winding rope, the combined weight of the suspension gear, retained spring force, and counterweights produces increased torque on the fulcrums, causing the arresters to grip the cage guides and arrest the free fall of the cage. Simultaneously, transducers actuated by adjustable screws generate visual and audible emergency signals to alert surface personnel. The invention significantly enhances safety in underground mining operations.

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(57) Abstract :
The present disclosure provides an analog proportional-integral controller apparatus (100) for cardiac pacemaker applications. The apparatus (100) includes a first current feedback operational amplifier (first CFOA) that forms a proportional path, a second current feedback operational amplifier (second CFOA) that forms an integral path, a common input node that connects y-terminals of both CFOAs, a first resistor (R_1) connected between the x-terminal of the first CFOA and ground, a second resistor (R_2) connected between the z-terminal of the first CFOA and the w-terminal of the second CFOA and a capacitor (C) connected between the z-terminal of the second CFOA and ground. Unlike conventional pacemaker controllers that require multiple active components and separate summing stages with interdependent gain parameters, this apparatus achieves independent tunability of proportional and integral gains with minimum component count suitable for implantable biomedical devices.

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