CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY

INTELLECTUAL PROPERTY RIGHTS

@CSJMU2025

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Chhatrapati Shahu Ji Maharaj University, Kanpur

(Uttar Pradesh State University Formerly Kanpur University, Kanpur)

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CSJMU AT A GLANCE

Vision

To enlighten and empower humanity by nurturing future leaders and change agents for universal evelopment and societal transformation

Mission

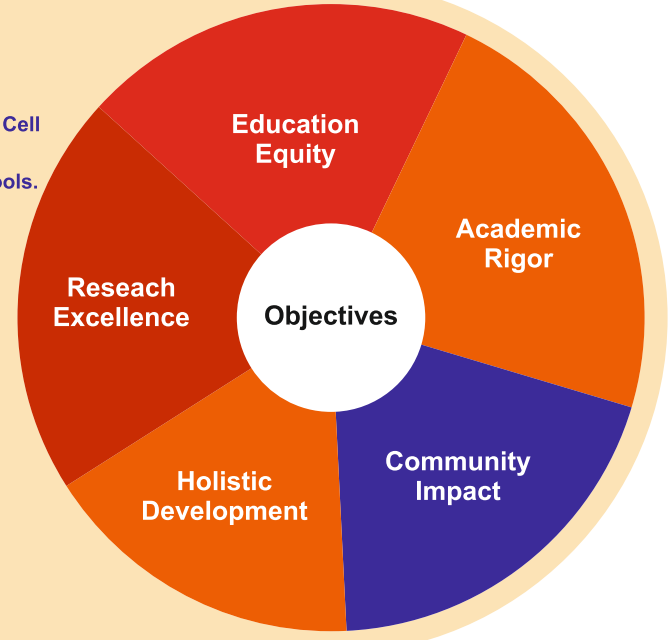
To work towards sustainable excellence in global standards of academia, technology-centric learning, robust research ecosystem, institutional distinctiveness and harmonious social diversity.

- Student 8000+
- Teachers 300+
- Staff 250+
- Alumni 10,000+

Campus Area 264 Acres
Base for Education & Research

The History

- **2024** – Establishment of IPR Cell
- **2021** – Organizational restructure, new schools.
- **2004** – 202 colleges, 100,000 students.
- **1994** – 84 colleges, 80,000 students.
- **1971** – Land acquired, construction commenced.
- **1966** – CSJM University officially established.
- **1949** – Commission recommended CSJM University establishment.



Our Schools

- Atal Bihari Vajpayee School of Legal Studies
- School of Advanced Agriculture Sciences and Technology
- School of Arts, Humanities and Social Sciences
- School of Creative and Performing Arts
- School of Engineering and Technology (UIET)
- School of Life Sciences and Biotechnology
- School of Pharmaceutical Sciences
- School of Basic Sciences
- School of Health Sciences
- School of Hotel Management
- School of Languages
- School of Teacher Education
- School of Business Management

MESSAGE FROM HON'BLE VICE CHANCELLOR

PROF. VINAY KUMAR PATHAK

HON'BLE VICE CHANCELLOR

Innovation and creativity form the foundation of progress in any society. Intellectual Property Rights (IPR) play a crucial role in safeguarding these innovations, ensuring that creators and inventors can benefit from their efforts. In a knowledge-driven economy, understanding and protecting intellectual property is essential for fostering an environment where research and innovation can thrive. At Chhatrapati Shahu Ji Maharaj University, Kanpur, we are committed to promoting a culture of intellectual discovery, encouraging our faculty and students to explore new ideas and translate them into real-world solutions.

Through the support of the Chhatrapati Shahu Ji Maharaj Innovation Foundation, a Section 8 non-profit company dedicated to advancing research and entrepreneurship, we empower ourselves to contribute meaningfully to the global economy while safeguarding our own intellectual contributions. Notably, the university fully bears the costs associated with patent filing, ensuring that this essential aspect of safeguarding innovation is readily accessible to all faculty and students.

Intellectual property protection is not merely a legal formality but a critical step towards ensuring the future of our research and ideas. By doing so, we strengthen our institution's reputation as a hub of innovation and excellence.

I urge all faculty and students to remain committed to this journey of knowledge creation and ensure that the fruits of their labour are protected. Together, let us pave the way for groundbreaking discoveries and foster an ecosystem that values intellectual growth.

MESSAGE FROM HON'BLE PRO VICE CHANCELLOR

PROF. SUDHIR KUMAR AWASTHI

HON'BLE PRO VICE CHANCELLOR

The advancement of research and innovation relies heavily on the protection of intellectual property. In today's fast-paced, technology-driven world, intellectual property rights (IPR) provide the legal framework to secure the outcomes of creative work and research. Patents, trademarks, and copyrights not only ensure the recognition of innovators but also facilitate the commercialization of new ideas, thus driving economic growth.

At Chhatrapati Shahu Ji Maharaj University, Kanpur, we have a responsibility as educators and researchers to instill a deep appreciation for the importance of IPR among our students and faculty. By understanding the value of intellectual property, we can encourage a culture of innovation that contributes to both the academic world and industry. Intellectual property protection also fosters collaboration, enabling innovators to safely share and exchange ideas without fear of infringement. This strengthens partnerships between academia and industry, driving further technological advancement.

By creating awareness around IPR, we empower future generations to navigate the complexities of innovation in a global context. Let us continue to champion the cause of intellectual property protection and make it an integral part of our academic and research endeavors.

MESSAGE FROM REGISTRAR

MR. RAKESH KUMAR

REGISTRAR

Intellectual property rights (IPR) have become a vital tool in fostering innovation and safeguarding the rights of creators in an increasingly competitive global landscape. Whether it's in research, academia, or industry, protecting intellectual assets ensures that the hard work of inventors and researchers is recognized and rewarded. The framework provided by patents, copyrights, and trademarks is essential for maintaining integrity in the innovation process.

At Chhatrapati Shahu Ji Maharaj University, Kanpur, we believe it is our duty to educate our faculty and students about the significance of IPR and equip them with the knowledge to secure their intellectual contributions. By nurturing a culture of intellectual property awareness, we can ensure that our research and innovations are well-protected and leveraged to create meaningful impact both locally and globally.

The protection of intellectual property serves as a catalyst for encouraging more innovative solutions. As we grow and expand our research efforts, understanding IPR enables us to retain ownership of valuable innovations, driving our university's contribution to the global knowledge economy. Supporting the filing of patents and other forms of intellectual property ensures our university remains a leader in cutting-edge research and development.

MESSAGE FROM THE DEAN OF INNOVATION, ENTREPRENEURSHIP, AND START-UP

DR. SHILPA DESHPANDE KAISTHA

DEAN OF INNOVATION, ENTREPRENEURSHIP, AND START-UP

Innovation is the driving force behind societal progress, and intellectual property rights (IPR) act as key enablers for translating ideas into tangible outcomes. From research labs to startups, the protection of intellectual property ensures that creators can maintain control over their innovations and derive the full benefits of their work.

At Chhatrapati Shahu Ji Maharaj University, Kanpur, through the Chhatrapati Shahu Ji Maharaj Innovation Foundation, a Section 8 non-profit company, we continue to foster a spirit of entrepreneurship and creativity. We emphasize the importance of protecting intellectual assets through IPR mechanisms like patents and copyrights. By safeguarding the interests of innovators, we also contribute to the broader goals of economic development and technological advancement.

The journey from innovation to commercialization often begins with robust intellectual property protection. IPR enables startups to attract investors, form strategic partnerships, and scale their ideas into marketable products and services. By embracing IPR, we can transform our institution into a beacon of innovation, creating opportunities for future generations to shape the world with their creativity and inventions. Let us commit to advancing knowledge while ensuring that our intellectual labour is fully protected.

MESSAGE FROM THE ASSISTANT DEAN OF IPR CELL

DR. DIVYANSH SHUKLA
(ASSISTANT DEAN IPR)

"Innovation is not just about new ideas—it's about reimagining possibilities. It's the courage to challenge the status quo, the curiosity to explore the unknown, and the determination to turn imagination into impact. In a world that changes by the minute, innovation is the spark that keeps us moving forward."

On behalf of the IPR Cell at Chhatrapati Shahu Ji Maharaj University, I am pleased to emphasize the pivotal role of innovation in shaping the future of education, research, and societal development. In today's fast-evolving world, fostering a culture of creativity, critical thinking, and problem-solving is more important than ever.

At CSJMU, we are committed to nurturing an ecosystem that not only encourages novel ideas but also supports their transformation into impactful solutions through intellectual property protection. Innovation is not just a concept—it is a mindset that drives progress, and our university proudly stands at the forefront of empowering young minds to think beyond boundaries and create meaningful change.

Chhatrapati Shahu Ji Maharaj University, Kanpur

(Uttar Pradesh State University Formerly Kanpur University)

About the IPR Cell

Established in the year 2024, IPR Cell plays a pivotal role in fostering an environment of innovation and intellectual property protection within the university. Its primary objective is to create awareness about the significance of Intellectual Property Rights (IPR) among students, faculty, and researchers, while providing guidance on the processes involved in protecting their inventions, research, and creative works.

The IPR Cell assists in identifying patentable ideas, facilitating patent filing, and ensuring the legal safeguarding of innovations. It also conducts workshops, seminars, and training sessions to educate the academic community on various aspects of IPR, including patents, copyrights, trademarks, and design rights. By acting as a bridge between innovators and the legal framework, the IPR Cell encourages commercialization of research and collaboration with industries.

The IPR Cell extends its services to teachers and students across the university and its affiliated colleges, ensuring comprehensive support in intellectual property protection. This inclusiveness promotes a wider culture of innovation, fostering creativity and collaboration throughout the academic ecosystem. By nurturing creativity and protecting intellectual contributions, the IPR Cell plays a crucial role in driving technological advancement and societal progress.

Research & Innovation

No. of Patents Filed Since 2024	No. of Patents Published Since 2024	No. of Workshop Organized Since 2024	No. of Patents Filed by Affiliated Colleges Since 2024	No. of Designs Filed Since 2024
356	**356**	**15**	**8**	**67**

Chhatrapati Shahu Ji Maharaj University, Kanpur

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Workshops Organised

Mr. Jignesh Mungalpara Partner, JT Attorney Alliance took a special technical session on the nuances of how to figure out research gap through patent database for the faculty members and Research Scholars of of School of Life Sciences and Biotechnology.

Dr. Rakesh Kumar Sharma, Associate Dean, Campus Research Promotion Cell has taken department-wise session for all the faculty members and Research Scholars of the CSJM University Campus informing them about the facilities provided by the university.

Mr. Tushar Kumar Srivastava, Partner, JT Attorney Alliance, took a special session for all the research scholars and faculty members of affiliated colleges informing them about the various types and benefits of registration of IPR.

Chhatrapati Shahu Ji Maharaj University, Kanpur

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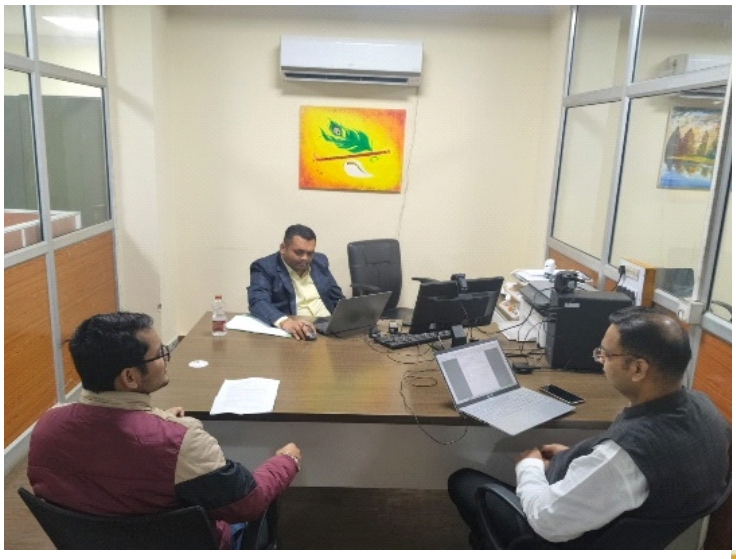
Workshops Organised



Chhatrapati Shahu Ji Maharaj IPR Cell has recently organized a series of workshops focused on Intellectual Property Rights (IPR), aiming to create awareness and encourage faculty members and research scholars to actively pursue patent filing for their innovative ideas. These workshops were designed to empower participants with essential knowledge regarding the patent process and to highlight the importance of protecting intellectual creations.

As part of this initiative, distinguished industry experts Mr. Jignesh Mungalpara and Mr. Tushar Srivastava from JT Attorney were invited to interact with the attendees. Their sessions provided valuable insights into the technical and legal aspects of patenting. The experts shared real-world examples, discussed common challenges in the patent filing process, and emphasized how researchers can refine and reformulate their ideas to meet the criteria required for successful patent applications.

The workshops received enthusiastic participation from faculty and research scholars across various disciplines. Attendees expressed appreciation for the expert guidance and found the sessions to be highly informative and motivating. The Innovation Foundation remains committed to fostering a culture of innovation and intellectual property awareness and looks forward to organizing more such programs in the future to support the academic and research community.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

CAPACITIVE TOUCH STYLUS PEN

APPLICATION NO.: 202411071927

INVENTORS:

VISHAL AWASTHI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
RAJ KRISHNA (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
PUSHPENDRA SINGH (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
ATUL KUMAR AGNIHOTRI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET))

ABSTRACT

Disclosed is a capacitive touch stylus pen comprising a central conductive rod disposed along a longitudinal axis. A plurality of layers of sodium chloride are disposed around said central conductive rod, wherein said sodium chloride layers are separated by a plurality of polythene layers positioned circumferentially around said central conductive rod. A non-conductive separator circumferentially surrounds said plurality of polythene layers and prevents direct contact between external conductive elements and said sodium chloride layers. An outer conductive covering encloses said non-conductive separator, wherein said outer conductive covering transmits capacitive input from a user's hand through said central conductive rod for interaction with a capacitive touchscreen. A tip is positioned at one end of said central conductive rod to facilitate capacitive interaction between said central conductive rod and a capacitive touchscreen.

CAPACITIVE TOUCH STYLUS WITH IONIC TRANSFER MECHANISM

APPLICATION NO.: 202411099273

INVENTORS:

VISHAL AWASTHI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
RAJ KRISHNA (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
PUSHPENDRA SINGH (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
ATUL KUMAR AGNIHOTRI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET))

ABSTRACT

Disclosed is a capacitive touch stylus pen comprising a central conductive rod disposed along a longitudinal axis. A plurality of layers of sodium chloride are disposed around said central conductive rod, wherein said sodium chloride layers are separated by a plurality of polythene layers positioned circumferentially around said central conductive rod. A non-conductive separator circumferentially surrounds said plurality of polythene layers and prevents direct contact between external conductive elements and said sodium chloride layers. An outer conductive covering encloses said non-conductive separator, wherein said outer conductive covering transmits capacitive input from a user's hand through said central conductive rod for interaction with a capacitive touchscreen.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

CERTIFICATE GENERATION AND MANAGEMENT USING BLOCKCHAIN AND HYPERLEDGER FABRIC

APPLICATION NO.: 202411066445

INVENTORS:

ER. PREETI SINGH (ELECTRONICS & COMMUNICATION ENGINEERING, UIET),DR VISHAL AWASTHI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), DR AJEET KR. SRIVASTAVA (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), ER. ANAND KR. GUPTA (ELECTRONICS & COMMUNICATION ENGINEERING, UIET, CSJMU)

ABSTRACT

Disclosed is a certificate generation and management system utilizing blockchain and Hyperledger Fabric, comprising a certificate issuance unit configured to issue certificates on a blockchain network by verifying the authenticity of recipient qualifications or achievements and creating a certificate record with relevant details; a digital wallet configured to securely store and manage certificates, enabling certificate holders to access and share certificates; a blockchain network comprising multiple nodes that participate in a consensus mechanism to validate and record transactions, ensuring that only authorized participants can access and interact with the network; a smart contract unit configured to define the rules and conditions for certificate issuance and verification, automating the execution of business logic within the network; a certificate verification unit configured to validate the authenticity and integrity of certificates by querying the blockchain using unique identifiers or validating cryptographic proofs embedded in certificates.

DIGITAL INSPIRATORY MUSCLE TRAINER SYSTEM

APPLICATION NO.: 202411051896

INVENTORS:

DR. VISHAL AWASTHI (ELECTRONICS AND COMMUNICATIONS ENGINEERING), DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES)

ABSTRACT

Disclosed is a digital inspiratory muscle trainer system, comprising a mouthpiece and tubing for user interaction, said mouthpiece and tubing connected to a pressure sensor configured to measure inspiratory pressure exerted during inhalation through said mouthpiece; a microcontroller operatively connected to said pressure sensor, said microcontroller configured to process data from said pressure sensor; a display unit operatively connected to said microcontroller, said display unit configured to display real-time inspiratory pressure readings

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HOME AUTOMATION SYSTEM USING SIGN LANGUAGE COMMANDS

APPLICATION NO.: 202411099276

INVENTORS:

VISHAL AWASTHI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)), AJEET KUMAR SRIVASTAVA (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)), AJAY TIWARI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)), AMIT KATIYAR (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
PREETI SINGH (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)), ATUL KUMAR AGNIHOTRI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET))

ABSTRACT

Disclosed is a home automation system comprising a sign language interface including a gesture recognition device that interprets sign language gestures and converts them into control commands. A processing unit processes such commands and translates them into voice commands or text commands. A virtual assistant receives such commands from the processing unit and executes instructions based on such commands. The system further includes an Internet of Things (IoT) platform, which communicates with home appliances and controls their operation based on instructions provided by the virtual assistant. The system enhances accessibility for users who use sign language by enabling home appliances to be controlled through gestures interpreted as commands.

AUGMENTATION OF SUPERCAPACITOR EFFICACY IN HYDROTHERMALLY SYNTHESISED FE3+ DOPED NIO NANOPARTICLES

APPLICATION NO.: 202411066338

INVENTORS:

LEEKESHWER UPADHYAY (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET),
DR BHOOMIKA YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET, CSJMU)

ABSTRACT

Disclosed is a method for synthesizing doped nickel oxide (NiO) nanoparticles, comprising the steps of preparing an aqueous solution of 0.5M Ni(NO3)2.6H2O by dissolving in de-ionized water; adding a 0.3M NaOH solution dropwise to said Ni(NO3)2.6H2O solution while stirring for approximately 40 minutes to form a precursor solution; doping said precursor solution by adding Fe3+ in concentrations of 0.02M, 0.04M, and 0.06M; stirring said doped precursor solution for 1 hour and transferring to a 150 ml Teflon-lined autoclave; heating said autoclave in a hot air oven at 160°C for 6 hours; filtering the resulting product and washing with de-ionized water and ethanol.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

PREDICTIVE CONTROL AND OPTIMIZATION SYSTEM USING LIE GROUPS IN ROBOTICS

APPLICATION NO.: 202511018289

INVENTORS:

DR. NAMITA TIWARI(DEPARTMENT OF MATHEMATICS AND COMPUTER APPLICATION),
DR. SHIVAM OMAR(DEPARTMENT OF MATHEMATICS),

ABSTRACT

Disclosed is a predictive control and optimization system for robotics. Said system comprises a computational framework employing Lie groups to model rigid body motion, including SO (3) for rotations and SE(3) for combined rotations and translations. Said system further includes a configuration space represented as a Lie group describing positions and orientations of robotic components. Said system incorporates control laws designed with Lie group properties for stable robotic movement along predefined paths. Said system also includes a path planning mechanism to compute optimal trajectories minimizing energy consumption while adhering to configuration space constraints.

SMART WALLET WITH FINGERPRINT LOCK AND GPS TRACKER

APPLICATION NO.: 202411066344

INVENTORS:

VINEETA SINGH (DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, UIET), KAMAL KANT (DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, UIET), SURUCHI SINGH (DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, UIET), ALOK KUMAR (DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, UIET), SHUBHENDRA SINGH (DEPARTMENT OF INFORMATION TECHNOLOGY, UIET), PUSHPA MAMORIA (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), MOHD. SHAH ALAM (DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, UIET), SHESH MANI TIWARI (DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, UIET), OMKAR AGRAHARI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), MR. AMIT VIRMANI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), DEEPAK KUMAR VERMA (DEPARTMENT OF COMPUTER APPLICATION)

ABSTRACT

Disclosed is a smart wallet system, comprising: a fingerprint sensor configured to register and sense a fingerprint signal to determine user authorization; a controller operatively connected to said fingerprint sensor, configured to receive authorization signals; a linear actuator operatively connected to said controller, configured to unlock said smart wallet upon receiving an authorization signal from said controller; a GPS tracker configured to track the location of said smart wallet and provide location data; a battery configured to provide power supply to said fingerprint sensor, said controller, said linear actuator, and said GPS tracker; a user device operatively connected to said smart wallet, configured to receive alerts and location data from said smart wallet.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR ANALYSING STUDENT AND TEACHER BEHAVIOUR USING CNN

APPLICATION NO.: 202511018283

INVENTORS:

PROF. VINAY KUAMR PATHAK(VICE CHANCELLOR),
OMKAR AGRAHARI(DEPARTMENT OF COMPUTER APPLICATION),

ABSTRACT

Disclosed is a system for analysing student and teacher behaviour during classroom sessions. The system includes an interactive whiteboard featuring a display interface, a camera for video capture, a video processing unit analysing classroom interactions, and a convolutional neural network for classifying behavioural and emotional states. The system further includes a teacher analysis component evaluating teaching behaviours and instructional methods, a student analysis component assessing behavioural patterns and engagement levels, and a speaker delivering real-time feedback. The system processes video data for generating comprehensive behaviour reports, which are displayed on the whiteboard and shared with educational administrators, enabling improved classroom dynamics and teaching strategies.

SYSTEM FOR DETECTING DISEASES IN TULSI LEAVES

APPLICATION NO.: 202411099263

INVENTORS:

ABHISHEK DWIVEDI (SCHOOL OF ENGINEERING AND TECHNOLOGY),AKHILESH SINGH (SCHOOL OF ENGINEERING AND TECHNOLOGY)

ABSTRACT

Disclosed is a system for detecting diseases in Tulsi leaves, comprising an image acquisition unit operatively connected to a camera device for capturing images of Tulsi leaves; a preprocessing unit configured to normalize said images by adjusting pixel values to a common range; a feature extraction unit that utilizes a deep learning architecture, wherein said feature extraction unit is adapted to identify key features of said images; a classification unit configured to categorize said key features into one or more disease classes, wherein said classification unit is based on a ResNet-50 deep learning model; and an output unit for displaying disease prediction results, wherein said results are based on binary classification of healthy and diseased leaves.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

OBJECT DETECTION SYSTEM FOR AGRICULTURAL PRODUCE

APPLICATION NO.: 202411099277

INVENTORS:

DR. ARPITA SINGH, ASSISTANT PROFESSOR
MR. ARPIT DUBEY, ASSISTANT PROFESSOR
PROF. DR. RABINS PORWAL, HEAD OF DEPT.
DEPARTMENT OF COMPUTER APPLICATION,
SCHOOL OF ENGINEERING AND TECHNOLOGY,
CSJM UNIVERSITY, KANPUR

ABSTRACT

Disclosed is a system for detecting objects in agricultural produce. The system includes an image input unit that captures input images, and a preprocessing unit that applies resizing, normalization, and augmentation to enhance image quality. The system further includes an object detection unit that processes the preprocessed images using a trained object detection model based on a convolutional neural network. The model is trained using a dataset of vegetable images, comprising multiple classes of agricultural produce. The system also includes an evaluation unit that assesses the model's performance based on metrics such as accuracy, speed, and resilience to variations in input images.

OPTIMIZATION OF NETWORK-LIFE TIME USING CLUSTERING DATA AGGREGATION TECHNIQUES IN WIRELESS SENSOR NE

APPLICATION NO.: 202411066454

INVENTORS:

MR. ATUL KUMAR AGNIHOTRI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET),
DR VISHAL AWASTHI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET, CSJMU)

ABSTRACT

Disclosed is a system for optimizing network lifetime using clustering data aggregation techniques in wireless sensor networks (WSNs). The system comprises an initialization unit configured to initialize particle swarm optimization (PSO) for selecting the first-round cluster head (CH) based on communication range, sensor nodes, and sink placements; a fitness function computation unit configured to derive the PSO fitness function combining residual energy and distance between nodes; a global and personal best selection unit configured to choose the best local solution for each node and determine the global best CH; a position and velocity update unit configured to update the position and velocity of each particle based on fitness values; an Improved Low-Energy Adaptive Clustering Hierarchy (ILEACH) clustering unit configured to form clusters using the ILEACH technique to reduce energy consumption and enhance network stability

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

PREDICTION OF HEART DISEASE USING MACHINE LEARNING TECHNIQUES

APPLICATION NO.: 202411066449

INVENTORS:

NIDHI GUPTA (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)),
DR RABINS PORWAL (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)),
DR ANIL KUMAR YADAV (REGISTRAR, CSJMU)

ABSTRACT

Disclosed is a system for predicting heart disease using machine learning techniques, comprising a data acquisition unit configured to collect patient data including demographic information, medical history, and clinical test results; a preprocessing unit operatively connected to said data acquisition unit, wherein said preprocessing unit is configured to clean, normalize, and transform said patient data; a feature extraction unit operatively connected to said preprocessing unit, wherein said feature extraction unit is configured to extract relevant features from said patient data; a machine learning model comprising an ensemble learning approach, wherein said machine learning model is optimized by an optimization technique to predict heart disease based on said relevant features.

EFFECTIVE TASK SCHEDULING IN CLOUD COMPUTING USING VARIOUS SUPERVISED LEARNING TECHNIQUES

APPLICATION NO.: 202411066339

INVENTORS:

DR MAYUR RAHUL (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), MR. HIMANSHU SHUKLA (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), MR. AMIT VIRMANI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), MR. AKHILESH SINGH (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), MR. PRASHANT SRIVASTAVA (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), MR. RITESH AGARWAL (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), MR. ARPIT DUBEY (DEPARTMENT OF COMPUTER APPLICATION, UIET, CSJMU)

ABSTRACT

Disclosed is a system for task scheduling in a cloud computing environment, comprising a task encoding unit configured to encode tasks according to specified problems; an initialization unit configured to initialize a task set and set a variable N to zero; a calculation unit configured to compute variables related to resource load balance degree, cost of task completion, and shortest waiting time, and to update said variables; a task set update unit configured to update the variables of the task set based on the computed values; a supervised learning unit configured to apply Support Vector Machine (SVM) and Random Forest techniques to enhance task scheduling by selecting the minimum processing time, completion cost, and resource load balance degree; an iteration control unit configured to determine the maximum number of iterations and control the continuation or termination of the process.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

FLEXIBLE ULTRA-WIDEBAND ANTENNA WITH CIRCULAR SLOTS FOR BIOMEDICAL APPLICATIONS

APPLICATION NO.: 202411071922

INVENTORS:

DR. NIRAJ KUMAR (ELECTRONICS & COMMUNICATION ENGINEERING , UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), OM PAL (ELECTRONICS & COMMUNICATION ENGINEERING , UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), SHALNI UPADHYAY (ELECTRONICS & COMMUNICATION ENGINEERING , UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)),

ABSTRACT

Disclosed is a wearable antenna system for biomedical applications. The antenna system comprises a flexible substrate formed from a textile material, a circular patch antenna disposed on said flexible substrate, wherein said circular patch antenna includes multiple slots for enhancing bandwidth, a ground plane positioned adjacent to said circular patch antenna, and a conductive feed element operatively connected to said circular patch antenna. The antenna system operates within an ultrawideband (UWB) frequency range and is structured to emit radiation at a reduced Specific Absorption Rate (SAR) to ensure user safety.

WEARABLE ULTRA-WIDEBAND ANTENNA SYSTEM FOR BIOMEDICAL AND COMMUNICATION APPLICATIONS

APPLICATION NO.: 202411099260

INVENTORS:

DR. NIRAJ KUMAR (SCHOOL OF ENGG.& TECHNOLOGY)
ER.AMIT KATIYAR(SCHOOL OF ENGG.& TECHNOLOGY),
ER.OMPAL(SCHOOLOF ENGG.& TECHNOLOGY)

ABSTRACT

Disclosed is a wearable antenna system for ultra-wide band communication comprising a rectangular section coupled to a semi-circular section forming an umbrella-shaped antenna structure. The rectangular section has a length in the range of 75 mm to 80 mm and a width in the range of 60 mm to 70 mm. The semi-circular section includes four circular slots to enhance impedance bandwidth and radiation performance. A feed-line is operatively connected to the rectangular section, optimized for impedance matching and signal transmission. A ground plane positioned below both sections improves signal reception and minimizes surface wave losses. The antenna system operates within the ultra-wide band frequency range, enabling high efficiency and enhanced bandwidth for biomedical and communication applications.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ANOMALY DETECTION SYSTEM FOR HEALTHCARE SYSTEMS

APPLICATION NO.: 202411051921

INVENTORS:

ARUN KUMAR RAI (DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY),
DR DEEPAK KUMAR VERMA (DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY)

ABSTRACT

Disclosed is an anomaly detection system for healthcare systems utilizing combined medical and network data, the system comprising data collection modules configured to aggregate data from various sources within a healthcare system, including medical devices, hospital information systems, and network infrastructure; a preprocessing engine configured to cleanse and normalize the aggregated data, ensuring suitability for analysis; a feature extraction unit configured to extract relevant features from the medical and network data, transforming such features into a format suitable for machine learning models.

DESIGN AND FABRICATION OF ABRASIVE JET MACHINE

APPLICATION NO.: 202411071551

INVENTORS:

ER. SHISHUPAL SINGH (DEPARTMENT OF MECHANICAL ENGINEERING, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET), CSJMU)

ABSTRACT

Disclosed is an apparatus for controlling abrasive media flow and pressure in an abrasive jet machine. The apparatus includes a variable-torque abrasive media feeder device comprising a torque converter coaxially coupled with an abrasive media supply chamber to regulate the flow rate of abrasive media particles. The torque converter is interposed between a rotary motor assembly and the abrasive media supply chamber to provide adjustable torque for consistent media flow. The apparatus further includes a hydraulic-spring assisted nozzle unit having a hydraulic piston and spring mechanism derived from an automotive suspension assembly to control jet pressure based on material surface conditions

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

INTELLIGENT CIVILIAN TRACKING SYSTEM FOR LARGE BUILDINGS

APPLICATION NO.: 202411066342

INVENTORS:

MR. ARPIT DUBEY (DEPARTMENT OF COMPUTER APPLICATION, UIET, CSJMU)

ABSTRACT

Disclosed is an intelligent civilian tracking system for large buildings, said system comprising: a sensing unit configured to detect human presence using a Passive Infrared (PIR) sensor and ultrasonic sensors; a counting unit operatively connected to said sensing unit, configured to tally the number of individuals entering and exiting a building using said ultrasonic sensors; a display unit operatively connected to said counting unit, configured to show the real-time number of occupants within the building on an LED display; and a microcontroller configured to process data from said sensing unit and said counting unit, and to update said display unit.

NEW EFFICIENT DIGITAL SIGNATURE SCHEME UTILIZING RANK ON CIRCULANT MATRIX

APPLICATION NO.: 202411066456

INVENTORS:

DR NAMITA TIWARI (JOINTLY WORKING IN DEPARTMENT OF COMPUTER APPLICATION AND UIET & DEPARTMENT OF MATHEMATICS), HAKIM SINGH (DEPARTMENT OF MATHEMATICS, CSJMU), DR. PN PATHAK (DEPARTMENT OF MATHEMATICS, CSJMU)

ABSTRACT

The present disclosure discloses a digital signature generation and verification system utilizing a rank method on circulant matrices, comprising a key generation unit configured to generate a public key and a private key using RSA algorithm; a signature generation unit configured to generate a digital signature by computing a circulant matrix from a given message, wherein each row of said circulant matrix is a circular shift of the previous row, determining a rank of said circulant matrix, generating said digital signature by encrypting said rank using said private key; a verification unit configured to verify said digital signature by decrypting said digital signature using said public key to obtain said rank, computing said circulant matrix from said given message, verifying said rank of said circulant matrix matches said decrypted rank.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HIGH-STRENGTH MAGNESIUM ALLOY SUITABLE FOR USE IN AIR VEHICLE FRAMES

APPLICATION NO.: 202411066796

INVENTORS:

DR BHOOMIKA YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING,UIET), PRIYANSHU SRIVASTAVA (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING,UIET)

ABSTRACT

The present disclosure discloses a high-strength magnesium alloy suitable for use in air vehicle frames, comprising 91-92% by weight magnesium (Mg), 4-5% by weight zinc (Zn), and 2-3% by weight scandium (Sc).

EXPLORING HYDROTHERMALLY SYNTHESISED CUO NANOPARTICLES' POTENTIAL FOR SUPERCAPACITOR UTILITY

APPLICATION NO.: 202411066321

INVENTORS:

LEEKESHWER UPADHYAY (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), DR BHOOMIKA YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET, CSJMU)

ABSTRACT

The present disclosure discloses a method for synthesizing copper oxide nanoparticles, comprising the steps of: stirring a solution comprising 0.5M copper(II) nitrate trihydrate ($Cu(NO3)2·3H2O$) and 0.3M sodium hydroxide (NaOH) in 80 ml of water for 1 hour to form a precursor solution; heating the precursor solution in an oven at a temperature of 160°C for 5 hours to obtain a resultant product; filtering and washing the resultant product to remove impurities; drying the filtered and washed product at a temperature of 100°C for 5 hours to obtain a dried product; crushing the dried product to obtain a nanopowder; subjecting the nanopowder to calcination at a temperature of 800°C to obtain copper oxide nanoparticles; and characterizing the copper oxide nanoparticles using thermogravimetric analysis (TGA) and differential thermal analysis (DTA).

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

PORTABLE HANDHELD APPARATUS FOR IDENTIFYING VEIN LOCATIONS

APPLICATION NO.: 202411066320

INVENTORS:

DR AJAY TIWARI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), DR VISHAL AWASTHI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), DR AJEET KUMAR SRIVASTAVA (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), ER AMIT KUMAR KATIYAR (ELECTRONICS & COMMUNICATION ENGINEERING, UIET, CSJMU)

ABSTRACT

The present disclosure discloses a portable handheld apparatus for identifying vein locations of a target skin surface to aid in venipuncture processes, said apparatus comprising a portable handheld housing; a first laser and a second laser configured to emit different wavelengths of light; one or more optical detectors responsive to said first wavelength and configured to receive a contrasted image from the target skin surface and convert it into an electrical signal; electronic circuitry configured to receive said electrical signal and output it to said second laser for projection of vein locations; a motorized lens adjustment system comprising a micro stepper motor, lead screws, and guide rails.

ANDROID MALWARE DETECTION FRAMEWORK USING ENSEMBLE MACHINE LEARNING

APPLICATION NO.: 202411066317

INVENTORS:

PRIYANSHU SRIVASTAVA (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), DR BHOOMIKA YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET, CSJMU)

ABSTRACT

The present disclosure discloses a system for detecting malware in Android applications, comprising a samples set module configured to store benign and malware samples, an opcode extraction module configured to unzip an APK file, parse a Dex module, and extract opcode sequences, a feature engineering module configured to generate a feature vector, apply n-gram analysis, and simplify features, a decision tree-support vector machine (DT-SVM) training module configured to train using the feature vector, optimize decision nodes, and apply DT-SVM classification, a test set verification module configured to classify test samples as benign or malware based on the DT-SVM model, and a result evaluation module configured to evaluate the classification result of the test set verification module.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR FACIAL EMOTION RECOGNITION

APPLICATION NO.: 202411051926

INVENTORS:

MR. ABHISHEK DWIVEDI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY), PROF. RABINS PORWAL (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY), MR. SHIVNEET TRIPATHI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY), MR. SHEKHAR VERMA (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY), MR. ARPIT DUBEY (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND

ABSTRACT

The present disclosure discloses a system for facial emotion recognition, the system comprising a data acquisition module configured to capture facial images, a preprocessing module configured to process said facial images by converting to grayscale and scaling to a predefined size, a convolutional neural network (CNN) model trained on a dataset including said processed facial images, wherein said CNN model comprises multiple hidden layers with varying filter sizes, dropout values, and kernel sizes, said CNN model being configured to recognize and classify emotions based on facial features.

RF (RADIO FREQUENCY) ENERGY HARVESTING FOR LOW POWER APPLICATION

APPLICATION NO.: 202411066319

INVENTORS:

ER.AMIT KUMAR KATIYAR (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), ER. PREETI SINGH (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), DR. AJAY TIWARI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), DR. VISHAL AWASTHI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET, CSJMU)

ABSTRACT

The present disclosure discloses a system for radio frequency energy harvesting, comprising a receiving antenna configured to capture radio frequency signals from an ambient environment, an impedance matching network operatively connected to said receiving antenna for maximizing power transfer between said receiving antenna and subsequent circuitry, a rectifier operatively connected to said impedance matching network, said rectifier configured to convert radio frequency signals into direct current (DC) signals, a DC pass filter operatively connected to said rectifier, said DC pass filter configured to allow passage of DC voltage while blocking higherorder harmonics of alternating current (AC) signals.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

CONTACTLESS BODY TEMPERATURE SCREENING SYSTEM

APPLICATION NO.: 202411043422

INVENTORS:

VISHAL AWASTHI (ELECTRONICS AND COMMUNICATIONS ENGINEERING), ATUL KUMAR AGNIHOTRI (ELECTRONICS AND COMMUNICATIONS ENGINEERING)

ABSTRACT

The present disclosure provides a contactless body temperature screening system (100) with image tracking, comprising a thermal imaging camera (102) configured to detect infrared radiation emitted from a body and convert said radiation into a temperature reading, an image tracking module (104) configured to track movements of individuals within a predefined area, identify individuals with elevated temperatures, and enable contact tracing by identifying individuals who have been in close proximity to an infected person using cameras and algorithms, a microcontroller unit (106) operatively connected to said thermal imaging camera (102) and said image tracking module (104) to process temperature readings and tracking data, a display unit (108) operatively connected to said microcontroller unit (106) to display temperature readings and identification information,

DIGITAL SIGNATURE SYSTEM BASED ON ELLIPTIC CURVE CRYPTOGRAPHY IN A HIGH-SPEED NETWORK

APPLICATION NO.: 202411071591

INVENTORS:

DR. NAMITA TIWARI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET), CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KALYANPUR, KANPUR, KANPUR NAGAR, UTTAR PRADESH, 208024, CSJMU)

ABSTRACT

The present disclosure provides a digital signature system based on elliptic curve cryptography for providing authentication and data integrity in a high-speed network. The system comprises a key generation component that generates a private-public key pair using elliptic curve cryptography, an encryption mechanism operatively connected to said key generation component, wherein said encryption mechanism receives a plaintext message and a public key, applies a hash function to said plaintext message, and generates a ciphertext for transmission over said high-speed network.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

FERROELECTRIC MEMORY DEVICE USING ALPHA-INDIUM SELENIDE FOR DATA STORAGE

APPLICATION NO.: 202511018303

INVENTORS:

DR. NAMITA TIWARI(DEPARTMENT OF MATHEMATICS AND COMPUTER APPLICATION), DR. ANJU DIXIT(DEPARTMENT OF PHYSICS AND MATERIALS SCIENCE AND METALLURGICAL ENGINEERING),

ABSTRACT

The present disclosure provides a ferroelectric memory device. Said ferroelectric memory device includes a substrate and a thin film comprising alpha-indium selenide deposited onto said substrate. Said thin film exhibits ferroelectric properties. Said ferroelectric memory device further includes a circuit assembly operatively connected to said thin film to facilitate data storage and retrieval operations. Said ferroelectric properties enable reduced power consumption and improved data retention reliability.

IOT-ENABLED HYGIENE MONITORING SYSTEM WITH CELLULOSE NANOFIBER AND COLORIMETRIC SENSING

APPLICATION NO.: 202511018309

INVENTORS:

DR. ALKA GUPTA(DEPARTMENT OF MATERIALS SCIENCE AND METALLURGICAL ENGINEERING), GAURAV TIWARI(DEPARTMENT OF MATERIALS SCIENCE AND METALLURGICAL ENGINEERING),

ABSTRACT

The present disclosure provides a hygiene monitoring system comprising a biodegradable cellulose nanofiber mat enriched with a colorimetric indicator exhibiting pH-sensitive color-changing properties to detect volatile amines associated with organic degradation. A sensing assembly detects such volatile amines and transmits real-time data through an Internet-of-Things communication unit to a cloud-based computing platform. Said cloud-based computing platform analyses transmitted data to generate contamination alerts and usage analytics. An alert mechanism triggers notifications to facility managers based on contamination thresholds or usage patterns.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SCNN BASED CLASSIFICATION TECHNIQUE FOR THE FACE SPOOF DETECTION USING DEEP LEARNING CONCEPT

APPLICATION NO.: 202411099254

INVENTORS:

ABHISHEK DWIVEDI (SCHOOL OF ENGINEERING AND TECHNOLOGY), SHEKHAR VERMA (SCHOOL OF ENGINEERING AND TECHNOLOGY)

ABSTRACT

The present disclosure provides a method for detecting face spoofing using convolutional neural network-based classification. An input image is received for pre-processing and feature extraction. Pre-processing includes image diffusion using Lab* color space and geometric features extraction. Facial alignment is detected in said input image. A face is detected using an improved Viola-Jones technique and Haar-Cascade features integrated with a specialized convolutional neural network. A visual geometry group network model is trained and tested using a pre-processed and aligned face image. The method classifies the input image to determine face liveness and outputs a classification result indicating whether said face is genuine or spoofed.

BARIUM TITANATE AND STRONTIUM DOPED BARIUM TITANATE BASED HETEROSTRUCTURE ENERGY STORAGE

APPLICATION NO.: 202411051925

INVENTORS:

MR. ABHISHEK DWIVEDI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY), PROF. RABINS PORWAL (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY), MR. SHIVNEET TRIPATHI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY), MR. SHEKHAR VERMA (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY), MR. ARPIT DUBEY (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND

ABSTRACT

The present disclosure provides a method for fabricating 2D/3D/2D heterostructures for energy storage. The method comprises the steps of preparing Barium Titanate (BT) and Strontium-doped Barium Titanate (BST) using a Sol-Gel technique, forming BT/BST/BT heterostructures by spin coating the BT and BST materials into thin films, depositing the 2D/3D/2D heterostructures of BT/BST/BT on a suitable substrate, measuring the thickness of the BT/BST/BT heterostructures using a thickness profilometer, and evaluating the dielectric properties of the BT/BST/BT heterostructures at various thicknesses and frequencies to determine the optimal configuration for energy storage applications.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR GENERATING A PROXY SIGNATURE USING ELLIPTIC CURVE CRYPTOGRAPHY AND CHAOTIC MAPS

APPLICATION NO.: 202411071592

INVENTORS:

DR. NAMITA TIWARI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET), CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KALYANPUR, KANPUR, KANPUR NAGAR, UTTAR PRADESH, 208024, CSJMU)

ABSTRACT

The present disclosure provides a method for generating a proxy signature in a cryptographic system utilizing elliptic curve cryptography (ECC) and chaotic maps, the method comprising the steps of: setting a security parameter for initializing elliptic curve cryptographic operations; generating an elliptic curve cryptographic key pair for a delegating entity based on said security parameter; generating a delegation by said delegating entity, wherein said delegation is verified by an original signer; generating a proxy key for a proxy signer based on said delegation and said elliptic curve cryptographic key pair.

METHOD FOR MANUFACTURING A BIODEGRADABLE NANOFIBER COMPOSITE MATERIAL FOR SMART FOOD PACKAGING

APPLICATION NO.: 202511018345

INVENTORS:

DR. ALKA GUPTA(DEPARTMENT OF MATERIALS SCIENCE AND METALLURGICAL ENGINEERING), GAURAV TIWARI(DEPARTMENT OF MATERIALS SCIENCE AND METALLURGICAL ENGINEERING),

ABSTRACT

The present disclosure provides a method for manufacturing a biodegradable nanofiber composite material for smart food packaging. The method includes preparing a solution of soluble potato starch by dissolving the starch in formic acid within a concentration range of 35% to 45% (w/v) and stirring at a speed within a range of 250 rpm to 350 rpm for a duration within a range of 20 hours to 30 hours. A polyvinyl alcohol solution is prepared by dissolving polyvinyl alcohol in distilled water within a concentration range of 8% to 12% (w/v) and stirring at a speed within a range of 400 rpm to 600 rpm for a duration within a range of 3 hours to 5 hours. The solutions are combined in a ratio within a range of 1:3 to 1:5 under stirring conditions to achieve homogeneity.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ASSESSMENT OF PHYSICOCHEMICAL AND ELECTROCHEMICAL TRAITS OF HYDROTHERMALLY MANUFACTURED?-FE2O3 NAN

APPLICATION NO.: 202411066316

INVENTORS:

LEEKESHWER UPADHYAY (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), DR BHOOMIKA YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET, CSJMU)

ABSTRACT

The present disclosure provides a method for preparing alpha ferric oxide (α-Fe2O3) nanoparticles, the method comprising the steps of dissolving an iron precursor in a solvent to form a precursor solution, adjusting the pH of the precursor solution using a pH regulator to obtain a desired pH level, transferring the precursor solution to a hydrothermal reactor, subjecting the precursor solution in the hydrothermal reactor to a temperature range of 100°C to 200°C for a predetermined duration to facilitate the hydrothermal synthesis of α-Fe2O3 nanoparticles, cooling the hydrothermal reactor to room temperature to obtain a suspension containing α-Fe2O3 nanoparticles, separating the α-Fe2O3 nanoparticles from the suspension through centrifugation, washing the separated α-Fe2O3 nanoparticles with a washing solvent to remove impurities, and drying the washed α-Fe2O3 nanoparticles.

COMPACT MICROSTRIP PATCH ANTENNA SYSTEM

APPLICATION NO.: 202411066345

INVENTORS:

ANAND KUMAR GUPTA (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET), AJEET KUMAR SRIVASTAVA (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET), PREETI SINGH (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET), SHRUTI DWIVEDI (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET), SHUBHI BAJPAI (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET, CSJMU)

ABSTRACT

The present disclosure provides a microstrip patch antenna system 100, comprising: a substrate 102 having dimensions of 20.25 mm by 20 mm by 1.6 mm; a patch 104 disposed on said substrate 102, wherein said patch 104 comprises: an outer elliptical region 106 with radii in a range of 4 mm to 10 mm; an inner elliptical region 108 with radii in a range of 1 mm to 4 mm; a first rectangular section 110 with dimensions of 2 mm by 11 mm; a second rectangular section 112 with dimensions of 3 mm by 8 mm; a third rectangular section 114 with dimensions of 4 mm by 1.5 mm; a fourth rectangular section 116 with dimensions of 3 mm by 1.5 mm; a fifth rectangular section 118 with dimensions of 0.5 mm by 1.5 mm; a feedline 120 having dimensions of 2.5 mm by 3 mm; a ground plane 122 disposed beneath said substrate 102 with dimensions of 20.25 mm by 10 mm.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

PROXY BLIND SIGNATURE APPROACH USING A REFORMED DISCRETE LOGARITHMIC PROBLEM

APPLICATION NO.: 202411066448

INVENTORS:

DR NAMITA TIWARI (JOINTLY WORKING IN DEPARTMENT OF COMPUTER APPLICATION AND UIET & DEPARTMENT OF MATHEMATICS), RISHIKA VISHWKARMA (DEPARTMENT OF MATHEMATICS, SCHOOL OF BASIC SCIENCES), MR. AMIT VIRMANI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET), CSJMU)

ABSTRACT

The present disclosure provides a proxy blind signature system utilizing a reformed discrete logarithmic problem, comprising an authority transfer unit configured to transfer signing authority from an original signer to a proxy signer; a blinding unit configured to blind a message to protect the privacy of said original signer; a signature generation unit configured to generate a proxy blind signature by utilizing said proxy signer to sign said blinded message; a verification unit configured to verify said proxy blind signature by unblinding said proxy blind signature and verifying said signature against said original message using a reformed discrete logarithmic problem.

SYSTEM FOR AUTOMATIC DETECTION AND ADJUSTMENT OF A VEHICLE STAND IN TWO-WHEELED VEHICLES

APPLICATION NO.: 202411099259

INVENTORS:

MR. ARPIT DUBEY, ASSISTANT PROFESSOR
DR. ARPITA SINGH, ASSISTANT PROFESSOR
DEPARTMENT OF COMPUTER APPLICATION,
SCHOOL OF ENGINEERING AND TECHNOLOGY,
CSJM UNIVERSITY, KANPUR

ABSTRACT

The present disclosure provides a system for automatic detection and adjustment of a vehicle stand in a two-wheeled vehicle. A sensing unit comprises an ultrasonic sensor to measure the distance between a metal strip and the vehicle stand, a gas sensor to detect the presence of smoke from an exhaust, a force sensor to measure the force applied by a rider, and a temperature sensor to measure engine temperature. A servo motor adjusts the position of the vehicle stand based on data from the sensing unit. A microcontroller processes data from the sensing unit and controls the servo motor. A power source supplies power to the microcontroller, sensing unit, and servo motor.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

PRESENTATION USING HAND GESTURES

APPLICATION NO.: 202411066799

INVENTORS:

MR. ARPIT DUBEY (DEPARTMENT OF COMPUTER APPLICATION, UIET), DR. RABINS PORWAL (DEPARTMENT OF COMPUTER APPLICATION, UIET), DR. ANIL KUMAR YADAV (REGISTRAR), MR. CHETAN SHARMA (DEPARTMENT OF COMPUTER APPLICATION, UIET)

ABSTRACT

The present disclosure provides a system for controlling a presentation application using hand gestures, comprising a processing unit configured to execute gesture recognition techniques, a camera operatively connected to said processing unit, wherein said camera captures live video of hand gestures, a memory unit operatively connected to said processing unit, wherein said memory unit stores pre-trained machine learning models for gesture recognition, a graphical user interface (GUI) configured to enable a user to select a presentation file, a gesture detection module configured to process the live video captured by said camera and recognize specific hand gestures based on said pre-trained machine learning models.

SYSTEM FOR DETECTING DRIFT IN MACHINE LEARNING MODELS FOR CYBERSECURITY APPLICATIONS

APPLICATION NO.: 202411099265

INVENTORS:

ANJALI YAGIK, DEPARTMENT OF COMPUTER APPLICATION, UIET, CSJMU KANPUR

DR. NAMITA TIWARI, DEPARTMENT OF MATHEMATICS AND COMPUTER APPLICATION, SBS & UIET, CSJMU KANPUR

ABSTRACT

The present disclosure provides a system for detecting drift in machine learning models for cybersecurity applications, comprising a data acquisition unit configured to collect real-time input data from one or more external sources, a feature extraction component operatively connected to the data acquisition unit for extracting input features from the input data, a drift detection component operatively coupled to the feature extraction component to identify deviations in the underlying data distribution over time, and an anomaly detection apparatus for analyzing the input features and identifying abnormal patterns indicative of potential security threats based on said deviations. The system further includes a notification unit in communication with the anomaly detection apparatus for generating alerts upon identification of said potential security threats.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

INTELLIGENT JOB FRAUD DETECTION USING MACHINE LEARNING ALGORITHMS

APPLICATION NO.: 202411066346

INVENTORS:

MR. SHILPI DUBEY (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), MR. ARPIT DUBEY (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), DR ANIL KUMAR YADAV (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), DR RABINS PORWAL (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET), CSJMU)

ABSTRACT

The present disclosure provides a system for detecting fraudulent job postings online, comprising a database, wherein said database stores a plurality of job postings; a data preprocessing unit, wherein said data preprocessing unit processes said plurality of job postings by removing missing values, stop-words, irrelevant attributes, and extra spaces, and by transforming the processed data into feature vectors; a classification engine, wherein said classification engine receives said feature vectors and applies a plurality of machine learning classifiers selected from a group consisting of Naive Bayes, Multi-Layer Perceptron, K-nearest Neighbor, Decision Tree, Random Forest, AdaBoost, and Gradient Boosting; a performance evaluation module, wherein said performance evaluation module evaluates the output of said classification engine based on metrics selected from a group consisting of Accuracy, F1-Score, Cohen-Kappa Score, and Mean Squared Error (MSE);.

SYSTEM FOR DEVELOPING A CURATED MEDICINAL PLANT DATABASE UTILIZING GEOSPATIAL TECHNOLOGIES

APPLICATION NO.: 202411051923

INVENTORS:

DR. MAMTA TIWARI (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY, CSJMU, KANPUR, UTTAR PRADESH, 208024), DR. SONI GUPTA (DEPARTMENT OF LIFE SCIENCE, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR, UTTAR PRADESH, 208024), DR. VANDANA PATHAK (CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR, UTTAR PRADESH, 208024), MR. SHIVNEET TRIPATHI

ABSTRACT

The present disclosure provides a system for developing a curated medicinal plant database utilizing geospatial technologies, said system comprising: a web application configured for storing and managing data related to medicinal plants, wherein said web application is operatively connected to a geospatial data collection module; said geospatial data collection module configured for geotagging medicinal plants by attaching QR codes to individual plant species, wherein said QR codes are linked to said web application; a database within said web application comprising information for each geotagged medicinal plant

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ENHANCING WIRELESS SIGNAL PROCESSING USING SIGNED DIGIT NUMBER SYSTEM BASED FIR FILTER

APPLICATION NO.: 202411066335

INVENTORS:

AJEET KUMAR SRIVASTAVA (ELECTRONICS AND COMMUNICATIONS ENGINEERING), DR VISHAL AWASTHI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), PARUL AWASTHI (ELECTRONICS AND COMMUNICATIONS ENGINEERING), DR AJAY TIWARI (ELECTRONICS AND COMMUNICATIONS ENGINEERING), PREETI SINGH (ELECTRONICS AND COMMUNICATIONS ENGINEERING), ANAND KUMAR GUPTA (ELECTRONICS AND COMMUNICATIONS ENGINEERING,

ABSTRACT

The present disclosure provides a system for enhancing wireless signal processing using a signed digit number system based finite impulse response filter, comprising: a digital signal input unit configured to receive input signals for processing; a signed digit logic unit configured to convert filter coefficients into signed digit format; a computation engine integrated within said signed digit logic unit responsible for generating intermediate results using said signed digit arithmetic; a filter processing unit configured to apply said finite impulse response filter operations utilizing said signed digit logic to said input signals, performing multiplication, addition, and accumulation; and a digital signal output unit configured to output the processed signals after said finite impulse response filtering.

FABRICATION OF HELICAL COIL HEAT EXCHANGER

APPLICATION NO.: 202411071550

INVENTORS:

ER. YASTUTI RAO GAUTAM (DEPARTMENT OF MECHANICAL ENGINEERING, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET), CSJMU)

ABSTRACT

The present disclosure provides a system for fabricating helical coil heat exchangers, comprising a gyroscopic alignment apparatus 102, including a gyroscopic stabilizer 104 operatively connected to a winding mandrel 106. The gyroscopic stabilizer 104 intersects the winding mandrel 106 at an angular orientation and dynamically adjusts the rotational orientation of the winding mandrel 106 to compensate for mechanical vibrations. A tuned mass damper system 110 is operatively coupled to the support frame 108 and includes a mass element 110-A and a damping mechanism 110-B. The damping mechanism 110-B dynamically adjusts in response to vibration frequency variations.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

QUANTUM-ASSISTED DIFFERENTIAL PRIVACY MECHANISMS FOR VECTOR EMBEDDINGS

APPLICATION NO.: 202411072382

INVENTORS:

DR NAMITA TIWARI (DEPARTMENT OF COMPUTER APPLICATION AND UIET & DEPARTMENT OF MATHEMATICS, CSJMU),

ABSTRACT

The present disclosure provides a system for generating privacy-preserved vector embeddings using quantum computing, comprising a data collection unit configured to gather input data, a preprocessing unit configured to normalize and preprocess said input data, a quantum processing unit configured to generate quantum embeddings from said preprocessed data, a noise addition unit configured to add differential privacy noise to said quantum embeddings, a quantum measurement unit configured to measure said quantum embeddings after noise addition, and a postprocessing unit configured to refine said measured embeddings into privacy-preserved vector embeddings.

STATISTICAL METHOD AND R SOFTWARE FOR IDENTIFYING SIMILARITIES BETWEEN CURVES

APPLICATION NO.: 202411066446

INVENTORS:

DR NAMITA TIWARI (JOINTLY WORKING IN DEPARTMENT OF COMPUTER APPLICATION AND UIET & DEPARTMENT OF MATHEMATICS), SHIKHA MISHRA (DEPARTMENT OF MATHEMATICS, SCHOOL OF BASIC SCIENCES), ANJALI YAGIK (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET), CSJMU)

ABSTRACT

The present disclosure provides a system for identifying similarities between curves, comprising: a curve preprocessing unit configured to normalize and preprocess input curves, apply smoothing techniques to reduce noise, and enhance relevant features; a feature extraction and representation unit configured to utilize advanced statistical techniques to extract key features from said curves; a similarity measurement unit configured to implement a similarity metric that combines statistical measures such as dynamic time warping, Frechet distance, and shape-based metrics; and an R implementation unit configured to facilitate the practical application of said method in various fields including data science, signal processing, and pattern recognition.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

RFID-BASED SYSTEM FOR ACCESS CONTROL IN PUBLIC ENVIRONMENTS

APPLICATION NO.: 202411099271

INVENTORS:

ER ATUL KUMAR AGNIHOTRI (SOET-ECE), DR. VISHAL AWASTHI (SOET-ECE), SAHBA FIRDAUS (SOET-ECE), ASHUTOSH SHARAN SRIVASTAVA(SOET-ECE), DR AJAY TIWARI(SOET-ECE), ER AMIT KUMAR KATIYAR(SOET-ECE).

ABSTRACT

The present disclosure provides a system for managing access control in a public environment, said system comprising a plurality of RFID tags, each RFID tag attached to an object or individual and configured to store identification data specific to the respective object or individual; a plurality of RFID readers operatively disposed in proximity to an entry or exit point, said RFID readers configured to wirelessly communicate with said plurality of RFID tags and capture said identification data; a communication infrastructure operatively connected to said plurality of RFID readers, said communication infrastructure configured to transmit said identification data to a central computing system; a central computing system operatively coupled to said communication infrastructure, said central computing system configured to process said identification data and determine access permissions for said object or individual based on pre-defined criteria;

STATISTICAL FUSION FRAMEWORK FOR OPTIMAL FEATURE SELECTION IN INTRUSION DETECTION USING MACHINE LEAR

APPLICATION NO.: 202411066334

INVENTORS:

AMRENDRA KUMAR SHARMA (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), DR MAMTA TIWARI (UIET, CSJMU)

ABSTRACT

The present disclosure provides a system for optimal feature selection in intrusion detection using machine learning, comprising: a data pre-processing unit configured to eliminate duplicate and null values and to transform non-numerical values into numerical values; a feature selection unit configured to perform Chi-square and Z-test statistical analyses on a dataset to identify significant features, wherein said Chi-square analysis calculates Chi-square scores and said Z-test analysis computes Z-scores, and wherein features with scores above a predetermined threshold are selected.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

CONTENT BASED BOOK RECOMMENDER SYSTEM USING SUPERVISED LEARNING

APPLICATION NO.: 202411099236

INVENTORS:

MAYUR RAHUL(SCHOOL OF ENGINEERING AND TECHNOLOGY), HIMANSHU SHUKLA(SCHOOL OF ENGINEERING AND TECHNOLOGY), AMIT VIRMANI(SCHOOL OF ENGINEERING AND TECHNOLOGY), AKHILESH SINGH(SCHOOL OF ENGINEERING AND TECHNOLOGY), PRASHANT SRIVASTAVA(SCHOOL OF ENGINEERING AND TECHNOLOGY), RITESH AGARWAL(SCHOOL OF ENGINEERING AND TECHNOLOGY)

ABSTRACT

The present disclosure provides a system for personalized book recommendations. The system includes a data collection unit retrieving user preferences and feedback, a feature extraction unit extracting features from book data through dimensionality reduction techniques, and a classification unit using a supervised learning model to categorize books based on user feedback and extracted features. A recommendation generation unit provides book recommendations according to classification results and user preferences. A feedback processing unit updates the recommendation system based on user interactions and feedback to refine future recommendations. The system improves recommendation accuracy by integrating user-specific preferences and real-time updates.

A SYSTEM FOR POST-QUANTUM CRYPTOGRAPHY UTILIZING A HASH FUNCTION

APPLICATION NO.: 202411051901

INVENTORS:

DR. NAMITA TIWARI (JOINTLY WORKING IN DEPARTMENT OF COMPUTER APPLICATION AND UIET & DEPARTMENT OF MATHEMATICS), DR. ANJU DIXIT (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES)

ABSTRACT

The present disclosure provides a system for post-quantum cryptography utilizing a hash function, comprising a key generation module configured to generate private and public keys using a key generation center (KGC); an encryption module configured to receive plaintext, a public key, and a hash function, and output ciphertext; a decryption module configured to receive ciphertext, a private key, and said hash function, and output plaintext; a communication module for transmitting said ciphertext from a sender to a receiver; a security parameter setting module for establishing a security parameter k; an operational cost optimization module for minimizing computational complexity.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

A COMPREHENSIVE STUDY ON MACHINE LEARNING PREDICTION OF HEART DISEASE

APPLICATION NO.: 202411066324

INVENTORS:

NIDHI GUPTA (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), DR RABINS PORWAL (DEPARTMENT OF COMPUTER APPLICATION, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY (UIET)), DR ANIL KUMAR YADAV (REGISTRAR, CSJMU)

ABSTRACT

The present disclosure provides a system for predicting heart disease utilizing machine learning, comprising a data gathering unit configured to collect heart disease data, including patient attributes selected from age, sex, chest pain type, resting blood pressure, cholesterol levels, fasting blood sugar, resting electrocardiographic results, maximum heart rate achieved, exercise-induced angina, exercise-induced ST depression, the slope of the peak exercise ST segment, the number of major vessels colored by fluoroscopy, and a target variable indicating the presence or absence of heart disease; a data preparation unit configured to handle missing values, normalize numerical features, and encode categorical variables in said collected data; a model training unit configured to train various machine learning models, including logistic regression, decision trees, random forests.

SYSTEM FOR PREDICTING USER ENGAGEMENT PATTERNS IN SOCIAL MEDIA PLATFORMS

APPLICATION NO.: 202411099257

INVENTORS:

1.NIDHI GUPTA, RESEARCH SCHOLAR, DEPARTMENT OF COMPUTER APPLICATION, CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY (CSJMU), KANPUR
2.DR. RABINS PORWAL, PROFESSOR & HEAD, DEPARTMENT OF COMPUTER APPLICATION, CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY (CSJMU), KANPUR
3.DR. ANIL KUMAR YADAV, REGISTRAR, CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY (CSJMU), KANPUR

ABSTRACT

The present disclosure provides a system for predicting user engagement patterns in a social media platform. A data acquisition unit is used to collect user interaction data from social media profiles, posts, comments, and engagement metrics. A feature extraction unit processes said user interaction data to extract macroscopic and high-order graph features representing temporal action patterns of individual users. A multi-channel neural model encodes such temporal action patterns and other macroscopic features for predicting future engagement. A predictive analytics engine executes machine learning processes on encoded features to generate predictions based on historical and real-time data. A result output unit outputs said predictions in a format suitable for further analysis.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

REAL TIME CROWD DETECTION ANTI-RIOT DRONE

APPLICATION NO.: 202411066447

INVENTORS:

DR VISHAL AWASTHI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), MR. ATUL KUMAR AGNIHOTRI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), MRS. PARUL AWASTHI (ELECTRONICS & COMMUNICATION ENGINEERING, UIET), MR. SOMESH KUMAR MALHOTRA (ELECTRONICS & COMMUNICATION ENGINEERING, UIET, CSJMU)

ABSTRACT

The present disclosure provides a system for real-time crowd detection and anti-riot operations using an unmanned aerial vehicle (UAV), comprising: a vertical motion control unit configured to adjust the thrust of the UAV rotors to achieve hover, ascend, and descend maneuvers; a rotational control unit configured to control the UAV's yaw by adjusting the angular velocities of the rotors to rotate the UAV; a directional movement unit configured to control forward, backward, and sideways movements by varying the thrust of specific rotors to tilt the UAV; a tear gas deployment unit configured to activate and deploy a tear gas canister using a servo mechanism; a highresolution camera unit configured to capture real-time video and images of the crowd; an onboard processing unit configured to process captured data using advanced real-time algorithms for crowd detection and person identification.

BLOCKCHAIN-POWERED SECURE DATA EXCHANGE SYSTEM FOR AI-DRIVEN CYBER THREAT INTELLIGENCE

APPLICATION NO.: 202411066797

INVENTORS:

MR. DIVYANSH SHUKLA (CSJMU), DR. VISHAL AWASTHI (ELECTRONICS & COMMUNICATION ENGINEERING,UIET)

ABSTRACT

The present disclosure provides a system for secure data exchange for AI-driven cyber threat intelligence, comprising a blockchain-powered secure data exchange device facilitating secure transmission and storage of data, a plurality of nodes operatively connected to said blockchain-powered secure data exchange device, wherein each of said nodes generates, transmits, and receives data packets associated with cyber threat intelligence, an AI-driven analytics unit operatively connected to said plurality of nodes, wherein said AI-driven analytics unit analyzes said data packets and derives actionable insights related to cyber threats.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR SECURE DATA COMMUNICATION WITHIN SMART GRID USING ADVANCED ENCRYPTION TECHNIQUES

APPLICATION NO.: 202411071580

INVENTORS:

DR. NIRAJ KUMAR (ELECTRONICS & COMMUNICATION DEPARTMENT, SCHOOL OF ENGINEERING & TECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure provides a system for securing data communication within a smart grid infrastructure, comprising an encryption component configured to encrypt data using an Advanced Encryption Standard (AES) algorithm, wherein the AES algorithm is executed with a key size of 128 bits; a decryption component configured to decrypt the encrypted data using the AES algorithm; a data input interface for receiving plain text data to be encrypted; a clock signal generation unit for providing timing signals; a reset function for clearing stored data and initiating system states to a predefined initial condition; a key management mechanism for managing the encryption key; and an output interface for transmitting encrypted data to external devices. The system is further configured to support real-time integration with FPGA hardware components to enable high-speed encrypted communication within the smart grid.

SYSTEM FOR WIRELESS COMMUNICATION IN A MESH TOPOLOGY

APPLICATION NO.: 202411071923

INVENTORS:

OM PAL (ELECTRONICS & COMMUNICATION DEPARTMENT, SCHOOL OF ENGINEERING & TECHNOLOGY), DR. NIRAJ KUMAR (ELECTRONICS & COMMUNICATION DEPARTMENT, SCHOOL OF ENGINEERING & TECHNOLOGY),

ABSTRACT

The present disclosure provides a system for wireless communication in a mesh topology, comprising a plurality of sensor nodes arranged in an 8x8 configuration, each sensor node having a unique row and column address; a wireless transceiver in communication with said sensor nodes, configured to transmit and receive data among said sensor nodes; a coordinator node operatively associated with said wireless transceiver, wherein said coordinator node gathers data from said sensor nodes and routes said data to a target node based on row and column addresses; a data processing unit processes said data gathered by said coordinator node.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR WIRELESS COMMUNICATION UTILIZING A HARDWARE CHIP IN A STAR TOPOLOGY NETWORK

APPLICATION NO.: 202411071583

INVENTORS:

OM PAL (ELECTRONICS & COMMUNICATION DEPARTMENT, SCHOOL OF ENGINEERING & TECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure provides a system for wireless communication utilizing a hardware chip, wherein the system comprises a wireless communication device configured to communicate in a star topology network, wherein said device operates in accordance with the Zig Bee communication standard; a central coordinator for managing communication between multiple wireless sensor nodes, wherein said central coordinator is configured to transmit and receive data to and from said sensor nodes; at least one sensor node configured to collect environmental data, wherein said sensor node communicates with said central coordinator in a real-time processing environment; a transceiver integrated within said wireless communication device, said transceiver configured to handle data transmission and reception between said central coordinator and said sensor nodeS..

SYSTEM TO EXTRACT GOLD FROM A PRINTED CIRCUIT BOARD

APPLICATION NO.: 202411066314

INVENTORS:

DR BHOOMIKA YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), VIJAY LAKSHMI YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), PRIYANSHU SRIVASTAVA (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), PRIYA SINGH PATEL (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET, CSJMU)

ABSTRACT

The present disclosure provides a system to extract gold from a printed circuit board (PCB), comprising a crushing unit to reduce PCB into smaller particles, a reaction chamber operatively connected to said crushing unit to hold said smaller particles, a leaching agent reservoir in fluid communication with said reaction chamber comprising a cyanide solution for dissolving gold, an aeration mechanism operatively connected to said reaction chamber to introduce oxygen into said cyanide solution, a filtration unit to separate dissolved gold-cyanide complexes from solid residues, a recovery vessel to receive said dissolved gold-cyanide complexes, a precipitation agent reservoir to convert said dissolved gold-cyanide complexes into solid gold particles.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM TO EXTRACT VALUABLE METALS FROM SPENT LITHIUM-ION BATTERIES

APPLICATION NO.: 202411066318

INVENTORS:

DR BHOOMIKA YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), PRIYANSHU SRIVASTAVA (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), VIJAY LAKSHMI YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), PRIYA SINGH PATEL (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET), AMAN USMANI (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING, UIET, CSJMU)

ABSTRACT

The present disclosure provides a system to extract valuable metals from spent lithium-ion batteries (LIBs). The system comprises a reaction chamber to hold spent LIBs, facilitating the leaching of valuable metals. The system includes a leaching agent reservoir with methane sulfonic acid (MSA) and a delivery mechanism to transfer MSA to the reaction chamber. A heating unit maintains a predetermined temperature, and a mixing apparatus agitates the contents. The system further features a solid-liquid separation mechanism to separate leachate from residual waste and a purification system, including options like solvent extraction, ion exchange, or membrane filtration, to purify the leachate. Finally, a recovery chamber recovers purified valuable metals, and a control system monitors and regulates the entire process.

TITANIUM-BASED ALLOY COMPRISING ALUMINUM AND VANADIUM

APPLICATION NO.: 202411066325

INVENTORS:

PRIYANSHU SRIVASTAVA (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING,UIET), DR BHOOMIKA YADAV (DEPARTMENT OF MATERIALS SCIENCE & METALLURGICAL ENGINEERING,UIET)

ABSTRACT

The present disclosure provides an alloy comprising: Aluminum (Al) in an amount ranging from 85% to 90% by weight; Magnesium (Mg) in an amount ranging from 4% to 6% by weight; and Lithium (Li) in an amount ranging from 4% to 6% by weight.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

MICROSTRIP PATCH ANTENNA SYSTEM

APPLICATION NO.: 202411066315

INVENTORS:

ANAND KUMAR GUPTA (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET, CSJMU), AJEET KUMAR SRIVASTAVA (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET, CSJMU), PREETI SINGH (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET, CSJMU), SHRUTI DWIVEDI (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET, CSJMU), SHUBHI BAJPAI (ELECTRONICS & COMMUNICATION DEPARTMENT, UIET, CSJMU)

ABSTRACT

The present disclosure provides an antenna system 100, comprising: a substrate 102 having dimensions of 48 mm by 92 mm by 1.6 mm; a patch antenna 104 disposed on said substrate 102, wherein said patch antenna 104 comprises: a first rectangular section 106 having dimensions of 46 mm by 19 mm; a second rectangular section 108 having dimensions of 18.5 mm by 14 mm; a third rectangular section 110 having dimensions of 46 mm by 20 mm; a fourth rectangular section 112 having dimensions of 15.5 mm by 16 mm; a fifth rectangular section 114 having dimensions of 46 mm by 15.5 mm; a feed line 116 having dimensions of 5 mm by 6.5 mm, operatively connected to said patch antenna 104; a ground plane 118 disposed beneath said substrate 102 with dimensions of 48 mm by 46 mm by 0.035 mm.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

FROZEN DAIRY DESSERT COMPOSITION WITH MORINGA OLEIFERA LEAF EXTRACT FOR ENHANCED NUTRITIONAL AND SENSORY PROPERTIES

APPLICATION NO.: 202411099241

INVENTORS:

SUDHIR KUMAR,
HRADESH RAJPUT AND AMAN RATHAUR

ABSTRACT

Disclosed is a composition for producing a frozen dairy dessert. Said composition includes a dairy base comprising milk, cream, and sugar. Said composition further includes Moringa oleifera leaf extract obtained through an aqueous extraction method. Said Moringa oleifera leaf extract contains bioactive compounds including vitamins, minerals, antioxidants, and phenolics. Said extract is homogenously integrated into said dairy base to enhance the nutritional and sensory properties of such frozen dairy dessert. Said composition provides a dairy dessert with improved antioxidant activity, contributing to enhanced nutritional value and unique flavor characteristics. The preparation method includes selecting Moringa oleifera leaves, extracting bioactive compounds, and mixing said extract into said dairy base. Sensory evaluations demonstrate superior texture and appeal for consumers.

ECOFRIENDLY ANTIFUNGAL MICROEMULSION BASED GEL LOADED WITH LEMONGRASS OIL

APPLICATION NO.: 202411071921

INVENTORS:

PALLAVI TIWARI ( ),
DR. NISHA SHARMA ( ),
RUCHI YADAV (),

ABSTRACT

The present disclosure provides a method for preparing a micro-emulsion-based topical formulation for antifungal treatment. The method comprises the steps of mixing oil, a non-ionic surfactant, and polyethylene glycol at room temperature; stirring said mixture at 1500 rpm at a temperature of approximately 37°C for 30 minutes to form a homogeneous phase; titrating distilled water into said homogeneous phase to form a micro-emulsion; allowing the mixture to cool to room temperature for 30 minutes to stabilize said micro-emulsion; incorporating said micro-emulsion into a gel base comprising Carbopol; and adjusting the pH of said gel base to approximately 5.8 by the addition of triethanolamine, thereby obtaining said micro-emulsion-based topical formulation.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

MICROSPHERE COMPOSITION FOR CONTROLLED RELEASE OF ANTIHYPERTENSIVE DRUGS

APPLICATION NO.: 202411071586

INVENTORS:

PALLAVI TIWARI (),
DR.NISHA SHARMA (),
DR.SHASHI KIRAN MISRA (),

ABSTRACT

The present disclosure provides a method for preparing antihypertensive drug-loaded microspheres for the management of hypertension. The method includes dissolving a first quantity of chitosan in a mixture of dichloromethane and ethanol to form an internal phase. The method further includes adding a first quantity of an antihypertensive agent to said internal phase. An external phase is prepared by dissolving polyvinyl alcohol in distilled water. The internal phase is then transferred into the external phase under stirring conditions at a speed of 300 to 400 revolutions per minute. Solvents from the internal phase are evaporated through continuous stirring to form microspheres. The microspheres are centrifuged for a defined duration, and said microspheres are collected for further characterization and evaluation.

COGNITIVE AND MOTOR FUNCTION EVALUATION DEVICE FOR RODENTS

APPLICATION NO.: 202411051897

INVENTORS:

DR. GAURAV KUMAR (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY),
ASHUTOSH KATIYAR (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

A cognitive and motor function evaluation device for rodents is provided, featuring a central platform, a T-maze, a light/dark box, a cliff avoidance reaction test unit, and a CatWalk test apparatus. The central platform serves as the starting area for rodents. The T-maze assesses decision-making and learning by measuring choices made by rodents. The light/dark box measures anxiety levels and exploratory behavior. The cliff avoidance reaction test unit assesses avoidance behavior and safety awareness. The CatWalk test apparatus captures detailed gait data, paw placement, and gait patterns to assess motor skills and coordination. The system includes a plurality of sensing devices and a data collection and analysis unit to provide detailed insights into cognitive functions, anxiety levels, motor skills, and gait patterns.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

INTEGRATED MAZE SYSTEM FOR COMPREHENSIVE NEUROBEHAVIORAL ANALYSIS OF RODENTS

APPLICATION NO.: 202411051895

INVENTORS:

DR. GAURAV KUMAR (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY),
ASHUTOSH KATIYAR (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

An integrated maze system for rodent neurobehavioral analysis includes a central platform configured as a starting area, multiple radial arms extending from the central platform, and various maze sections connected to the radial arms. The maze sections comprise an elevated plus maze, a ladder rung path, and a rotating rod section, each designed to assess specific neurobehavioral parameters. Additionally, the maze system incorporates multiple sensors for tracking rodent movement, an artificial intelligence unit for analyzing data, a data collection module for real-time data collection, and a graphical user interface for setup, monitoring, and analysis. The system facilitates comprehensive analysis of rodent behavior, including spatial memory, anxiety, balance, coordination, motor skills, and decision-making processes, thus providing valuable insights for neurobehavioral research.

DIETARY COMPOSITION FOR SUPPORTING GUT HEALTH AND COGNITIVE FUNCTION IN INDIVIDUALS WITH ALZHEIMER'S DISEASE

APPLICATION NO.: 202411099231

INVENTORS:

SHILPA DESHPANDE KAISTHA,
SHILPI RANI,
SANJAY KUMAR,
EKTA KHARE

ABSTRACT

Disclosed is a dietary composition for promoting gut health and supporting cognitive function in individuals with Alzheimer's disease, said composition comprising powdered inulin in an amount of 20% by weight; powdered acacia fiber in an amount of 15% by weight; powdered green banana flour in an amount of 15% by weight; powdered psyllium husk in an amount of 10% by weight; powdered oat fiber in an amount of 10% by weight; powdered chia seeds in an amount of 10% by weight; powdered beetroot in an amount of 10% by weight; powdered carrot in an amount of 5% by weight; and powdered ginger in an amount of 5% by weight, wherein said composition includes prebiotic fibers and bioactive compounds to facilitate the growth of probiotics producing short-chain fatty acids to support beneficial gut microflora, enhance nutrient absorption, and improve cognitive function.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR ASSESSING DISEASE SEVERITY AND RISK SCORE IN ARTHRITIS PATIENTS

APPLICATION NO.: 202411099237

INVENTORS:

ANAMIKA DWIVEDI (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), VARSHA GUPTA (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY)

ABSTRACT

Disclosed is a method for assessing disease severity and calculating a risk score in a patient suffering from rheumatoid arthritis or osteoarthritis, comprising obtaining a biological sample from the patient; analyzing the biological sample to determine the presence of MTHFR C677T and A1298C polymorphisms; measuring serological markers, wherein the serological markers include C-reactive protein (CRP), osteopontin (OPN), SGOT, SGPT, creatinine, triglycerides, and cholesterol levels; correlating the presence of the homozygous mutant genotype 677 TT with increased triglyceride levels and decreased vitamin D levels; and assigning weighted values to the polymorphisms and serological markers to calculate a risk score indicative of disease severity in the patient.

BIOCHAR BASED MICROBIAL FORMULATION FOR BIOREMEDIATION OF TEXTILE AZO DYES

APPLICATION NO.: 202411071924

INVENTORS:

AJAY KUMAR PANDEY (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), AATISH SINGH (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY),

ABSTRACT

Disclosed is a method for removing textile dyes from a dye effluent in a bioreactor, comprising inoculating a bioreactor with a textile dye-degrading culture of Alcaligens faecalis IBB1, introducing a textile dye effluent having a first concentration of dye into said bioreactor to enable bio-digestion of the dye, wherein the bioreactor is maintained at a temperature between 35°C and 39°C, and discharging the bio-digested dye effluent from the bioreactor after a pre-set time, wherein the discharged effluent has a second concentration of dye, the second concentration being 10-20% of the first concentration.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

MICROBIOLOGICAL MEDIUM FOR IDENTIFYING BIOFILM-FORMING MICROORGANISMS

APPLICATION NO.: 202411072381

INVENTORS:

DR SHILPA DESHPANDE KAISTHA (SCHOOL OF LIFE SCIENCE & BIOTECHNOLOGY),
\SANJAY KUMAR (SCHOOL OF LIFE SCIENCE & BIOTECHNOLOGY),
EKTA KHARE (SCHOOL OF LIFE SCIENCE & BIOTECHNOLOGY),

ABSTRACT

Disclosed is a microbiological medium for identifying biofilm-forming microorganisms, the microbiological medium comprising a proteinaceous substrate in an amount ranging from 15- 18 g/L, a nitrogen source in an amount ranging from 4-6 g/L, a carbon source in an amount ranging from 40-50 g/L, sodium chloride in an amount ranging from 5-10 g/L, a phosphate buffer in an amount ranging from 2-3 g/L, magnesium sulphate in an amount ranging from 0.1-0.3 g/L, calcium chloride in an amount ranging from 0.05-0.15 g/L, ferrous sulphate in an amount ranging from 0.05-0.15 g/L, zinc sulphate in an amount ranging from 0.05-0.15 g/L, a plant growth regulator in an amount ranging from 0.05-0.15 g/L, a gelling agent in an amount ranging from 13-16 g/L, a chromogenic substrate in an amount ranging from 0.6-1.2 g/L, and a surfactant in an amount ranging from 0.008-0.015 g/L.

SYSTEM FOR ISOLATING AND ANALYZING BACTERIOPHAGES FROM SEDIMENT PARTICLES

APPLICATION NO.: 202511018307

INVENTORS:

DR SHILPA DESHPANDE KAISTHA (SCHOOL OF LIFE SCIENCE & BIOTECHNOLOGY), SANJAY KUMAR (SCHOOL OF LIFE SCIENCE & BIOTECHNOLOGY), EKTA KHARE (SCHOOL OF LIFE SCIENCE & BIOTECHNOLOGY),

ABSTRACT

Disclosed is a microbiological medium for identifying biofilm-forming microorganisms, the microbiological medium comprising a proteinaceous substrate in an amount ranging from 15- 18 g/L, a nitrogen source in an amount ranging from 4-6 g/L, a carbon source in an amount ranging from 40-50 g/L, sodium chloride in an amount ranging from 5-10 g/L, a phosphate buffer in an amount ranging from 2-3 g/L, magnesium sulphate in an amount ranging from 0.1-0.3 g/L, calcium chloride in an amount ranging from 0.05-0.15 g/L, ferrous sulphate in an amount ranging from 0.05-0.15 g/L, zinc sulphate in an amount ranging from 0.05-0.15 g/L, a plant growth regulator in an amount ranging from 0.05-0.15 g/L, a gelling agent in an amount ranging from 13-16 g/L, a chromogenic substrate in an amount ranging from 0.6-1.2 g/L, and a surfactant in an amount ranging from 0.008-0.015 g/L.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR UNIFORMLY COATING SEEDS

APPLICATION NO.: 202511018306

INVENTORS:

SHILPA DESHPANDE KAISTHA(SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), KOMAL SINGH(SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), SUBHAM YADAV(SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), SANJAY KUMAR(SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY),

ABSTRACT

Disclosed is a system for uniformly coating seeds, comprising a hopper configured to store seeds and provide uniform feeding into a coating chamber, wherein the hopper incorporates a vibratory mechanism for consistent seed flow. An auger feeder is operatively connected to the hopper to transport seeds to the coating chamber. The coating chamber includes a multipoint spray system with rotating or oscillating nozzles for uniform coating application and a timing mechanism to regulate seed exposure duration. A drying chamber is operatively connected to the coating chamber and includes a drying drum with a tapered design to ensure single-layer seed movement, a controlled exit mechanism for batch discharge, and sensors for monitoring and adjusting temperature and humidity. A collection chamber is operatively connected to the drying chamber, comprising a vibratory or oscillating conveyor for separating and distributing coated seeds into individual trays while minimizing clumping.

ENERGY DRINK POWDER FORMULATION INCORPORATING METHYLSULFONYLMETHANE (MSM) FOR ENHANCED HEALTH BENEFI

APPLICATION NO.: 202411066443

INVENTORS:

APEKSHA RANA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), DR GAURAV KUMAR (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), ASHUTOSH KATIYAR (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure discloses a composition for an energy drink powder formulation, said composition comprising Methylsulfonylmethane (MSM) in an amount between 500 mg to 3000 mg per serving, Caffeine in a dosage between 50 mg to 300 mg per serving, Taurine in a serving range of 500 mg to 2000 mg, B-vitamins including B1, B2, B3, B5, B6, and B12 in concentrations sufficient to cover 100% of the recommended daily allowance per serving size, Electrolytes in an amount of 200 mg per serving, Flavoring and sweetening agents in an amount of 2 gm per serving, Fiber sources, Natural colors and additives, and Preservatives for stability and shelf-life.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD TO DIFFERENTIATE LEUCOCYTES IN BLOOD OF HETEROPNEUSTES FOSSILIS

APPLICATION NO.: 202511018288

INVENTORS:

VINOD KUMAR VERMA (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY),

ABSTRACT

The present disclosure discloses a method to differentiate leucocytes in blood samples of Heteropneustes fossilis. The method involves preparing thin blood smears on clean glass slides using fresh blood, air-drying said smears, and fixing using methanol. Said smears are stained vertically in a solution of Giemsa stain and sodium-potassium phosphate buffer at pH 6.8 for twenty-four hours at room temperature. Stained smears are rinsed under tap water, air-dried, mounted with DPX, and examined under a microscope. The method provides clear differentiation of lymphocytes, neutrophils, eosinophils, monocytes, and basophils, facilitating identification with enhanced clarity for hematological studies in fish.

ORAL RINSE COMPOSITION FOR POST-SUGAR CONSUMPTION DENTAL CARE

APPLICATION NO.: 202411066458

INVENTORS:

DR SHILPA DESHPANDE KAISTHA (DEPARTMEN T OF BIOTECHNOLOGY SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), DR NISHA SHARMA (SCHOOL OF PHARMACEUTICAL SCIENCES), SHILPI RANI (DEPARTMENT OF MICROBIOLOGY SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), DR EKTA KHARE (DEPARTMENT OF MICROBIOLOGY SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure discloses an herbal oral rinse composition for post-sugar consumption dental care, comprising neem (Azadirachta indica) extract in the range of 1.5% to 2.5%; clove (Syzygium aromaticum) oil in the range of 1.5% to 2.5%; tea tree (Melaleuca alternifolia) oil in the range of 0.5% to 1.5%; peppermint (Mentha piperita) oil in the range of 1.5% to 2.5%; propolis extract in the range of 2% to 3%; acacia (Acacia arabica) extract in the range of 1.5% to 2.5%; aloe vera (Aloe barbadensis) juice in the range of 1% to 2%; green tea (Camellia sinensis) extract in the range of 1.5% to 2.5%; eucalyptus oil in the range of 0.5% to 1.5%; Zn hydroxyapatite nanocrystal conjugates in the range of 0.5% to 1.5%; vitamin C (ascorbic acid) in the range of 0.5% to 1.5%; stabilized curcumin in the range of 0.25% to 0.75%; probiotics in the range of 0.5% to 1.5%; glycerin in the range of 2.5% to 3.5%; and purified water in the range of 75% to 85%.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HIGH SULFUR PROTEIN BARS WITH NATURALLY OCCURRING SULFUR COMPOUND SULFORAPHANE

APPLICATION NO.: 202411051922

INVENTORS:

DR. GAURAV KUMAR (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY),
APEKSHA RANA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a high sulfur-rich protein bar system comprising a blend of dry ingredients selected from a group consisting of oatmeal, rye flakes, pea protein crisp, broccoli powder, and salt, a blend of wet ingredients selected from a group consisting of rapeseed oil, shea oil, concentrated apple juice, inulin syrup, and concentrated lemon juice, a process for combining said dry ingredients and said wet ingredients to form a formative biomass, a baking sheet for applying said formative biomass to form a rectangular block, an oven configured to bake said rectangular block at a temperature of 200°C for a duration of 5 minutes, a cooling apparatus for setting said baked rectangular block at room temperature for a duration of 15 minutes, and a cutting apparatus for cutting said cooled rectangular block into individual protein bars of 40 grams each.

HYDROGEL FORMULATIONS INFUSED WITH TAURINE AND SULFUR (SILVER SULFADIAZINE 1%) COMPOUNDS FOR ENHANCED WOUND HEALING

APPLICATION NO.: 202411051924

INVENTORS:

DR. GAURAV KUMAR (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY),
ARPITA MISHRA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a hydrogel formulation for wound healing, comprising an alginate-based hydrogel matrix, taurine, at least one sulfur (silver sulfadiazine 1%) compound with antimicrobial, analgesic, antibacterial, antifungal, and anti-inflammatory properties, and an emulsifying agent, wherein said hydrogel formulation provides enhanced wound healing through sustained release of therapeutic agents, maintaining a moist environment, and offering antioxidant, anti-inflammatory, analgesic, antibacterial, and antifungal effects.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ISOLATION AND CHARACTERIZATION OF CADMIUM TOLERANT PLANT GROWTH PROMOTING RHIZOBACTERIA

APPLICATION NO.: 202411066455

INVENTORS:

SHREYA VERMA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), MANISHI TRIPATHI (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure provides a method for coating a seed for enhanced growth in heavily contaminated soil. The method comprises the steps of sterilizing the seed surface with an outer layer of a sterilizing agent, wherein the sterilizing agent is 0.1% Mercuric chloride applied for 2 minutes, followed by washing the seeds three times with sterile water. The method further includes applying a first intermediate layer consisting of a saline solution, wherein the saline solution comprises a strain of plant growth-promoting rhizobacteria (PGPR), and applying a second intermediate layer of carboxymethyl cellulose to promote adhesion of the PGPR to the seed surface.

PROCESS OF DEVELOPING LIPOPEPTIDE BIOSURFACTANT CONTAINING DETERGENT FOR SUPERIOR CLEANING AND ANTIM

APPLICATION NO.: 202411066452

INVENTORS:

DR EKTA KHARE (DEPARTMENT OF MICROBIOLOGY, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), MS. PRAGATI SHARMA (DEPARTMENT OF MICROBIOLOGY, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure provides a method for developing a lipopeptide biosurfactant containing detergent, said method comprising the steps of cultivating Bacillus subtilis BM22 in a media, precipitating biosurfactant from cell-free broth by adjusting pH to 2.0 using hydrochloric acid and incubating at 4°C overnight, collecting precipitated material by centrifugation, extracting biosurfactant compounds by adding chloroform-methanol mixture to the dry product and incubating, filtering the mixture using a membrane and evaporating to dryness, formulating a detergent powder by combining sodium tripolyphosphate, sodium sulfate, and said biosurfactant, washing stained cloth pieces with said detergent formulation at a constant temperature and pH, and evaluating cleaning efficacy by measuring oil removal percentage and stain absorbance using a spectrophotometer.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ANTIBACTERIAL AND ANTIFUNGAL POTENTIAL OF EUPHORBIA TIRUCALLI HYDROETHANOLIC EXTRACT AND METHODS OF

APPLICATION NO.: 202411072384

INVENTORS:

SHREYA VERMA (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY,KALYANPUR, KANPUR, KANPUR NAGAR, UTTAR PRADESH, 208024), DR. AJAY KUMAR GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES), SANGEETA (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. MANISHI TRIPATHI (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY,KALYANPUR, KANPUR, KANPUR NAGAR, UTTAR PRADESH, 208024)

ABSTRACT

The present disclosure provides a method for exhibiting antibacterial and antifungal properties using hydroethanolic extract of Euphorbia tirucalli, comprising extracting said hydroethanolic extract from Euphorbia tirucalli utilizing Soxhlet extraction methods, Agar well diffusion method and Microdilution method applying said hydroethanolic extract to gram-positive bacteria including Staphylococcus aureus and Coagulase-negative Staphylococcus (CoNS), and gram-negative bacteria including Pseudomonas aeruginosa and Proteus vulgaris, applying said hydroethanolic extract to fungal strains including Candida albicans and Aspergillus niger, measuring the zone of inhibition of said hydroethanolic extract against said bacteria and fungi to determine antimicrobial effectiveness, utilizing said hydroethanolic extract in a concentration with minimum inhibitory concentration (MIC) of 100 µl/ml to achieve significant inhibition zones.

METHOD FOR IMMOBILIZING LIGNOCELLULOLYTIC ENZYMES ON SILICA-DOPED BIOCHAR NANOPARTICLES

APPLICATION NO.: 202411099235

INVENTORS:

1. AJAY KUMAR PANDEY, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CHHATRPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR, UTTAR PRADESH,
2. ANJALI VERMA, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CHHATRPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR, UTTAR PRADESH

ABSTRACT

The present disclosure provides a method for immobilizing lignocellulolytic enzymes on silicadoped biochar nanoparticles. The method includes obtaining biochar by pyrolyzing lignocellulosic biomass under controlled temperature and pressure conditions, treating said biochar with an acidic solution to remove alkali and alkaline earth metals and bio-oil residues, incorporating nano-sized silica into said biochar by ball-milling the biochar with silica particles, dispersing the silica-doped biochar in a calcium chloride solution, and subjecting the mixture to sonication and stirring. The resultant solid mixture is dried at a controlled temperature to obtain a homogenized composite and is further pyrolyzed in a tubular reactor under an inert atmosphere to form a silica-doped biochar nanoparticle material. Surface functionalization of said nanoparticle material with functional groups selected from carboxyl, hydroxyl, or amine groups is conducted. The functionalized material is then combined with a solution of activated lignocellulolytic enzyme in the presence of a crosslinking agent, followed by rinsing to remove unbound enzyme and drying the enzyme-immobilized biochar.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR ISOLATING AND IDENTIFYING ALPHA RHAMNOSIDASE-PRODUCING MICROBIAL STRAINS

APPLICATION NO.: 202511024405

INVENTORS:

PRAMOD K. YADAV(SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY),
KUNWAR VISHAL(SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY),

ABSTRACT

The present disclosure provides a method for isolating and identifying α-L-rhamnosidase-producing microbial strains. The method includes collecting microbial samples from natural sources such as soil, decaying citrus plants, and rotten citrus fruits. The method further includes culturing the collected samples on a nutrient medium supplemented with naringin to induce microbial growth. Screening is conducted by observing halo zone formation around microbial colonies on the nutrient medium to detect α-L-rhamnosidase production. The microbial colonies exhibiting halo zones are selected for further analysis. Molecular characterization of the selected microbial colonies is performed using Internal Transcribed Spacer (ITS) gene sequencing. The microbial strain is identified by comparing the sequencing results with existing microbial databases.

METHOD FOR MONITORING HEAVY METAL POLLUTION IN AN AQUATIC BODY USING FISH LIVER TISSUE ANALYSIS

APPLICATION NO.: 202411099232

INVENTORS:

DINESH KUMAR (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY),
VARSHA GUPTA (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY).

ABSTRACT

The present disclosure provides a method for monitoring heavy metal pollution in an aquatic body. The method comprises collecting liver tissue samples from fish in the aquatic body, isolating total RNA from the collected liver tissue samples, synthesizing complementary DNA (cDNA) from the isolated RNA using reverse transcriptase enzyme, performing a quantitative reverse transcriptase polymerase chain reaction (RT-PCR) analysis by amplifying the cDNA with MT gene-specific primers and 18S rRNA as an internal control, separating the amplified PCR products using agarose gel electrophoresis, and measuring the mRNA levels of the MT gene in the liver tissue to assess heavy metal pollution in the aquatic ecosystem.D

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR PREDICTING RHEUMATOID ARTHRITIS ONSET AND SEVERITY BASED ON GENETIC PROFILING

APPLICATION NO.: 202411099233

INVENTORS:

SIPAHEE LAL PATEL (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), VARSHA GUPTA (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a method for predicting the onset and severity of rheumatoid arthritis (RA) in a subject based on genetic profiling, comprising receiving a biological sample from the subject; genotyping the subject for the TGF-β1 +869C/T gene polymorphism; identifying the subject's genotype as one of TT genotype, CT genotype, or CC genotype; assessing a risk score of developing RA based on the presence of the T allele; and providing the risk score. The method enables prediction of RA susceptibility by analyzing the subject's genetic profile, allowing for early intervention and risk assessment based on the presence of specific alleles linked to RA.

METHOD FOR PREPARING BIOPOLYMERIC CREAM FOR DIABETIC WOUND HEALING

APPLICATION NO.: 202511018349

INVENTORS:

ANURADHA KALANI (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), MUMTAJ BANO MIYA(SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY),

ABSTRACT

The present disclosure provides a method for preparing a biopolymeric cream for diabetic wound healing. The method comprises dissolving agar in water at a temperature of approximately 90°C to form a homogeneous agar solution, dissolving gelatin in water to prepare a gelatin solution, and combining said agar solution and said gelatin solution with aloe vera juice extracted from Aloe barbadensis leaves to form a biopolymeric base gel. Oxygenated herbal nanovesicles prepared from extracts of Azadirachta indica, Aloe barbadensis, and Zingiber officinale are incorporated into said biopolymeric base gel. Said biopolymeric base gel and said oxygenated herbal nanovesicles are mixed to form a homogeneous mixture. Said homogeneous mixture is stabilized by refrigeration to obtain a biopolymeric cream with spreadable consistency suitable for application on diabetic wounds.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

DEVELOPING A FORMULATION THAT COMBINES ANTIBIOTICS AND SYNBIOTICS FOR ENHANCED THERAPEUTIC BENEFITS

APPLICATION NO.: 202411043418

INVENTORS:

BHANU KUSHWAHA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), DR. RAKESH KUMAR SHARMA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a method for preparing a therapeutic formulation, the method comprising: providing a plurality of probiotic entities; coating said plurality of probiotic entities with a prebiotic material to form coated probiotic entities, wherein said coating is performed such that direct contact between said probiotic entities and an antibiotic is avoided; combining said coated probiotic entities with an antibiotic agent to form a mixture, wherein said antibiotic agent is capable of treating bacterial infections and said prebiotic material is selected to reduce the risk of horizontal gene transfer between said probiotic entities and any pathogenic counterparts; and formulating said mixture into a dosage form suitable for administration to a patient, wherein said formulation maintain antibiotic efficacy while mitigating dysbiosis associated with antibiotic use.

METHOD FOR PREPARING CHITOSAN NANOPARTICLES FOR TARGETED RELEASE OF YEAST-DERIVED EXOPOLYSACCHARIDES IN ROS-RICH ENVIRONMENTS

APPLICATION NO.: 202411099246

INVENTORS:

1. AJAY KUMAR PANDEY, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CHHATRPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR, UTTAR PRADESH, 2. PRATIBHA BHADAURIYA, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CHHATRPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR, UTTAR PRADESH

ABSTRACT

The present disclosure provides a method for preparing chitosan nanoparticle encapsulated yeast-derived exopolysaccharides (EPS) for targeted release in reactive oxygen species (ROS)-rich environments. The method comprises the steps of providing yeast-derived exopolysaccharides, forming a biodegradable chitosan nanoparticle matrix by dissolving chitosan in an acidic solution, incorporating said yeast-derived exopolysaccharides into said chitosan nanoparticle matrix using an anionic crosslinker in a controlled environment, wherein said anionic crosslinker comprises tripolyphosphate polyanion, adjusting the pH of said controlled environment to approximately 5.5 to optimize encapsulation, and forming chitosan nanoparticles encapsulating said yeast-derived exopolysaccharides, wherein said nanoparticles are selectively designed to release said yeast-derived exopolysaccharides in the presence of elevated ROS levels.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR PRODUCING ANTIMICROBIAL BIOCHAR DISC FOR SUSTAINED RELEASE OF ESSENTIAL OILS

APPLICATION NO.: 202411099239

INVENTORS:

1. AJAY KUMAR PANDEY, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CHHATRPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR, UTTAR PRADESH, 2. ANJALI VERMA, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CHHATRPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR, UTTAR PRADESH

ABSTRACT

The present disclosure provides a method for producing an antimicrobial biochar disc for sustained release of essential oils. Said method comprises preparing a biochar material from carbon-rich biomass through pyrolysis to obtain a stable carbon structure; molding said biochar material into a disc form with predetermined dimensions; impregnating said disc with an essential oil selected from tea tree oil, eucalyptus oil, or combinations thereof to enhance antimicrobial properties; drying such impregnated biochar disc to retain the essential oil; and packaging said antimicrobial biochar disc to facilitate application in microbial infection control.

METHOD FOR PRODUCING BIOETHANOL FROM LIGNOCELLULOSIC BIOMASS

APPLICATION NO.: 202411071589

INVENTORS:

AJAY KUMAR PANDEY (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure provides a method for producing bioethanol from lignocellulosic biomass, the method comprising growing fungal strains on wheat bran as a substrate under solid-state fermentation (SSF) conditions, wherein the fermentation is carried out for a period ranging from 5 to 10 days at a temperature between 25°C and 35°C and at a moisture content of 60% to 70%; extracting a crude secretome from the SSF fermentate using sodium citrate buffer with a concentration ranging from 40 mM to 60 mM and a pH between 4.5 and 5.0; determining the cellulase activity of the extracted crude secretome; pre-treating sugarcane bagasse with 1% to 2% v/v H_2SO_4; and hydrolyzing the sugarcane bagasse to produce bioethanol.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR PRODUCING BIOGAS USING FUNGAL STRAINS AND ENZYMATIC HYDROLYSIS UNDER SOLID-STATE FERMENTA

APPLICATION NO.: 202411071552

INVENTORS:

AJAY KUMAR PANDEY (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY),
AATISH SINGH (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY),

ABSTRACT

The present disclosure provides a method for producing biogas comprising growing fungal strains on wheat bran as a substrate under solid-state fermentation conditions, wherein the fermentation is carried out for a period ranging from 5 to 10 days at a temperature between 25°C and 35°C and at a moisture content of 60% to 70%; extracting a crude secretome from the solid-state fermentation fermentate using sodium citrate buffer with a concentration ranging from 40 mM to 60 mM and a pH between 4.5 and 5.0; determining the cellulase activity of the extracted crude secretome; pre-treating sugarcane bagasse with 1% to 2% v/v H_2SO_4 at 121°C for 45 minutes, washing, drying, and mixing with sodium citrate buffer; and incubating the biomass suspension in the presence of crude secretome to hydrolyze the sugarcane bagasse and produce biogas.

POST FERMENTATION MUSTARD OIL CAKE SUBSTRATE AS UNREMUNERATIVE RAW MATERIAL FOR SUBSEQUENT FERMENTAT

APPLICATION NO.: 202411066451

INVENTORS:

DR EKTA KHARE (DEPARTMENT OF MICROBIOLOGY, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY),
DR SHILPA DESHPANDE KAISTHA (DEPARTMENT OF BIOTECHNOLOGY,SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure provides a method for producing Polyhydroxyalkanoates (PHA) and biosurfactants utilizing mustard oil cake, comprising: preparing a nutrient medium containing 3% mustard oil cake; inoculating said medium with Bacillus subtilis BN22 culture; incubating said inoculated medium at 28°C for 72 hours; centrifuging said culture at 500 rpm for 2 minutes to remove residual oil cake; further centrifuging said culture at 5000 rpm for 15 minutes to remove bacterial cells; extracting PHA from said bacterial cells; quantifying said biosurfactants from cellfree culture supernatant.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR CO-PRODUCTION OF POLYHYDROXYALKANOATES (PHA) AND BIOSURFACTANTS USING BACILLUS SUBTILIS A

APPLICATION NO.: 202411066323

INVENTORS:

DR. EKTA KHARE (DEPARTMENT OF MICROBIOLOGY, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), MS. RIYANSHI VERMA (DEPARTMENT OF MICROBIOLOGY, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), MS. SHIVANI VERMA (DEPARTMENT OF MICROBIOLOGY, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure provides a method for the co-production of polyhydroxyalkanoates (PHA) and biosurfactants, said method comprising: developing a culture medium containing only mustard oil cake at a concentration ranging from 1% to 5%; inoculating said culture medium with Bacillus subtilis strain and incubating at a temperature of approximately 28°C for a period of 48 hours; subjecting the culture to a first centrifugation at 500 rpm for 2 minutes to remove oil cake particles, followed by a second centrifugation at 5000 rpm for 15 minutes to remove bacterial cells, resulting in a cell-free culture supernatant and bacterial cell pellet; extracting PHA from said bacterial cell pellet; using said cell-free culture supernatant for the quantification and extraction of biosurfactants; precipitating biosurfactants from said cell-free culture supernatant by adjusting the pH to approximately 2.0 using 6 N HCl, incubating at a temperature of approximately 4°C overnight, and collecting the precipitated biosurfactant by centrifugation at 11000 x g for 20 minutes; purifying said biosurfactant by resuspending in water, neutralizing, acidifying to pH 2.0, incubating at 4°C for 30 minutes, and centrifuging at 10000 g for 30 minutes.

MICROBIAL FUEL CELL SYSTEM FOR DETECTING HEAVY METAL CONCENTRATION

APPLICATION NO.: 202411049528

INVENTORS:

VANSHIKA TRIVEDI (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), DR. RAKESH KUMAR SHARMA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a microbial fuel cell system for detecting heavy metal concentration. The system comprises a polyethylene tube, an anode comprising biochar configured to support microorganism growth, an agar gel matrix within the polyethylene tube, a cathode comprising aluminum, and a voltmeter configured to measure potential difference between the anode and the cathode.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

PHARMACEUTICAL FORMULATION TO REDUCE THE FREQUENCY OF RHEUMATOID ARTHRITIS FLARES

APPLICATION NO.: 202411099234

INVENTORS:

VARSHA GUPTA (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY), SIPAHEE LAL PATEL (SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a pharmaceutical formulation to reduce the frequency of rheumatoid arthritis flares, the formulation comprising Vitamin D in an amount of 4.5 - 8 L units, Vitamin C in an amount of 450-650 mg administered twice a week, Methotrexate (MTX) in an amount of 12-18 mg, and Folic acid in an amount of 4-8 mg.

SMART NEONATAL HOOD SYSTEM

APPLICATION NO.: 202511024406

INVENTORS:

DR. GAURAV KUMAR (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a smart neonatal hood system comprising a hood body enclosing a neck guard hole, a plurality of sensors positioned within said hood body, the plurality of sensors including an oxygen sensor, humidity sensor, and temperature sensor for monitoring environmental conditions, a display screen intersecting the hood body for displaying real-time data collected from said plurality of sensors, a rotator coupled to said display screen for selecting desired parameters for display, and an oxygen pipe intersecting said hood body for delivering regulated oxygen based on feedback from said oxygen sensor.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR DETECTION AND CLASSIFICATION OF BIOFILM-FORMING COLONIES ON AGAR MEDIUM

APPLICATION NO.: 202411072383

INVENTORS:

DR SHILPA DESHPANDE KAISTHA (SCHOOL OF LIFE SCIENCE & BIOTECHNOLOGY), SANJAY KUMAR (SCHOOL OF LIFE SCIENCE & BIOTECHNOLOGY), EKTA KHARE (SCHOOL OF LIFE SCIENCE & BIOTECHNOLOGY),

ABSTRACT

The present disclosure provides a system for detecting and classifying biofilm-forming colonies on an agar medium. The system comprises an imaging device configured to capture images of inoculated agar plates. An image processing unit is operatively connected to the imaging device, wherein said image processing unit is adapted to enhance the visibility of colonies and detect colony boundaries from the captured images. A convolutional neural network (CNN) is operatively coupled with said image processing unit, wherein said convolutional neural network is pre-trained to analyze the processed images and classify biofilm-forming colonies based on visual characteristics. A user interface is adapted to display analysis results, wherein said user interface includes features for image visualization, quantitative data display, and manual annotation.

A SYSTEM FOR DYE REMOVAL FROM WATER

APPLICATION NO.: 202411051898

INVENTORS:

DR SWASTI SRIVASTAVA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a system for dye removal from water, comprising a holding unit that comprises a biosorbent made from green coconut shell, said green coconut shell being processed by washing, sun drying, oven drying, and grinding to form a fine powder; a set of conical flasks containing water and various dyes selected from the group consisting of eosin, safranin, and methylene blue; a means for mixing the green coconut shell powder with the water and dye in the conical flasks; a hot water bath shaker maintaining a temperature of 30°C and providing constant stirring for a predetermined period; an ultraviolet-visible (UV-Vis) spectrophotometer configured to measure the absorbance of dye in the water at specified time intervals to determine the amount of dye adsorption by the green coconut shell powder.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR HYDROLYZING HARDWOOD

APPLICATION NO.: 202411051900

INVENTORS:

DR SWASTI SRIVASTAVA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), SHANYA MALVIYA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a system for hydrolyzing hardwood, comprising a hydrolysis reactor configured to receive hardwood powder, a sulfuric acid supply system operatively connected to the hydrolysis reactor, said sulfuric acid supply system configured to provide sulfuric acid at a concentration of 10%, a temperature control system operatively connected to the hydrolysis reactor, said temperature control system configured to maintain a temperature of 45 degrees Celsius within the hydrolysis reactor, a timer module operatively connected to the hydrolysis reactor, said timer module configured to control the duration of the hydrolysis process to be between 24 to 27 minutes, and a charring prevention system configured to monitor and prevent the charring and carbonization of the hardwood powder during the hydrolysis process.

SYSTEM FOR PROGNOSTIC EVALUATION OF HEAD AND NECK SQUAMOUS CELL CARCINOMA

APPLICATION NO.: 202411066312

INVENTORS:

SONALI AWASTHI (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), PROF. SUDHIR KUMAR AWASTHI (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), DR. ANURADHA KALANI (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), DR. RAJEEV MISHRA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY, CSJMU)

ABSTRACT

The present disclosure provides a system for prognostic evaluation of head and neck squamous cell carcinoma (HNSC). The system comprises a computing device configured to receive gene profile data of a person and a server arrangement coupled to said computing device via a network interface. The server arrangement is configured to acquire the received gene profile data, retrieve expression levels of a solute carrier family 16 member 11 (SLC16A11) gene, compare said expression levels with expression levels in normal and tumor tissues using a publicly accessible database, assess the relationship between said expression levels and the overall survival and disease-free survival rates of said person, evaluate the correlation between said expression levels and immune cell infiltration levels in the tumor microenvironment, generate a prognostic report including disease progression and survival probabilities, and render said report at the computing device.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

A SYSTEM FOR VALORISING WASTE HARDWOOD SCRAPS INTO VALUE-ADDED PRODUCTS

APPLICATION NO.: 202411051900

INVENTORS:

DR SWASTI SRIVASTAVA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY), SHANYA MALVIYA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a system for valorising waste hardwood scraps into value-added products, comprising a collection unit configured to collect raw hardwood waste samples from various sites including industrial areas, local furniture markets, parks, and gardens; a processing unit configured to wash the collected samples to remove dirt and debris, sundry the samples to prevent microbial or fungal growth, crush and grind the samples into smaller particles to form a finer powder, and sieve the powder to separate coarse fibers from finer ones; a pre-treatment unit configured to delignify the hardwood powder via a bleaching process using hydrogen peroxide, wherein the hardwood powder is soaked in hydrogen peroxide overnight and then boiled at 45°C with additional water added to prevent burning, resulting in chemically purified cellulose free from lignin and hemicellulosic content, and the cellulose is washed to achieve neutral pH; a hydrolysis unit configured to boil the chemically purified cellulose wood powder with sulfuric acid at varying concentrations to perform acidic hydrolysis, wherein the reaction is stopped by adding chilled distilled water after a set period; a centrifugation unit configured to centrifuge the hydrolysed samples at high speeds to remove acidic water, thereby obtaining downsized cellulose crystals suitable for use in composite materials.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

INTEGRATING ML BASED ANALYSIS AND MEASUREMENT OF INSPECT AGRICULTURE INVESTIGATIONS FOR TEA LEAF DIS

APPLICATION NO.: 202411066444

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT), DR PRAVEEN KATIYAR (SCHOOL OF HEALTH SCIENCE, CSJMU)

ABSTRACT

A system for detecting and measuring tea leaf diseases using machine learning is disclosed. The system includes an image capturing unit configured to capture high-resolution images of tea leaves using drones and ground-based cameras. An image preprocessing unit enhances image quality, removes noise, and segments individual leaves from the background. A feature extraction unit identifies key characteristics such as color, texture, and shape indicative of specific diseases. A machine learning model trained on a dataset of healthy and diseased tea leaves detects and classifies tea leaf diseases. A user interface enables users to capture and analyze images of tea leaves using smartphones, displaying real-time results of the disease detection and classification.

INTEGRATING ML BASED ANALYSIS AND MEASUREMENT OF INSPECT AGRICULTURE INVESTIGATIONS FOR GRAPES WINE

APPLICATION NO.: 202411066362

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT),
DR PRAVEEN KATIYAR (SCHOOL OF HEALTH SCIENCE),
MR. ANKIT KUMAR (SCHOOL OF HOTEL MANAGEMENT),
MR. ARVIND CHAUHAN (SCHOOL OF HOTEL MANAGEMENT),
MS. AISHWARYA ARYA (SCHOOL OF HOTEL MANAGEMENT),
MR. SAURABH TRIPATHI (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

A system for managing grapevine diseases is disclosed. The system includes an image capturing unit to capture high-resolution images of grapevines. A machine learning-based analysis unit analyzes these images to detect diseases. A feature extraction component extracts features such as leaf texture and color variations. A classification module classifies these features to indicate healthy or diseased grapevines. A real-time monitoring unit tracks disease progression. A decisionmaking module aggregates and analyzes data to provide insights into disease patterns and treatment timings. A data storage unit stores images, features, and analysis results, facilitating comprehensive disease management.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HOTEL CLIMATE MANAGEMENT DEVICE WITH MOTORIZED VENT ADJUSTMENT AND SENSOR-BASED CONTROL

APPLICATION NO.: 202411099230

INVENTORS:

SAURABH TRIPATHI , SCHOOL OF HOTEL MANAGEMENT , CSJM UNIVERSITY KANPUR

ABSTRACT

Disclosed is a climate control unit for hotel management comprising a foundation with a guard structure, a screw shaft rotatably installed in the foundation, a panel guided by grooves, a lever fixed to the screw shaft, a drive unit connected to the screw shaft, and detectors linked to the drive unit for climate control.

DUAL-LAYER DISPLAY SYSTEM FOR ENHANCED TOURIST VISUAL EXPERIENCES

APPLICATION NO.: 202411099281

INVENTORS:

NAME OF INVENTOR(S): MR. SHIVANSU SACHAN,PRAVEEN KATIYAR,PRAVEEN BHAI PATEL

DEPARTMENT: SCHOOL OF HOTEL MANAGEMENT, SCHOOL OF HEALTH SCIENCE,UIET

ABSTRACT

Disclosed is a dual-layer display system to enhance tourist visual experiences. The system comprises a dual-layer display to render a high-definition focal region and a peripheral low-resolution region. An eye-tracking sensor is positioned adjacent to said dual-layer display and detects a focused point of visual attention. A graphics processor is operatively coupled to said eye-tracking sensor and adjusts said focal region based on said detected visual attention. An optical assembly is positioned over said dual-layer display and blends said focal and peripheral regions, enabling enhanced visual immersion for extended use by tourists.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HOSPITALITY ARRANGEMENT FOR ACCOMMODATING PETS

APPLICATION NO.: 202411099274

INVENTORS:

NAME OF INVENTOR(S):
MR. SHIVANSU SACHAN

DEPARTMENT: SCHOOL OF HOTEL MANAGEMENT

ABSTRACT

Disclosed is a hospitality arrangement for accommodating pets comprising a first container to house pet essentials, said first container being positioned adjacent to a storage unit. A ventilation module is located beneath said storage unit, aligning vertically with an airflow conduit. An adjustable restraining unit is mounted onto said ventilation module, with said adjustable restraining unit aligned transversely with said first container. A surveillance system is integrated onto said adjustable restraining unit, wherein said surveillance system monitors pet activity.

METHOD FOR EVALUATING METAL CONTENT IN CHOCOLATE

APPLICATION NO.: 202411071546

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

Disclosed is a method for evaluating the metal content in chocolate, comprising obtaining a chocolate sample, performing an acid digestion process on said chocolate sample to break down organic components, filtering a resultant solution to remove particulate matter, analyzing the filtered solution using inductively coupled plasma mass spectrometry (ICP-MS) to detect metal content, and recording quantitative levels of detected metals present in said chocolate sample.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

AN IOT BASED MILK VENDING MACHINE

APPLICATION NO.: 202411066363

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT), MR. SAURABH TRIPATHI (SCHOOL OF HOTEL MANAGEMENT), MR. ANKIT KUMAR (SCHOOL OF HOTEL MANAGEMENT), MR. ARVIND CHAUHAN (SCHOOL OF HOTEL MANAGEMENT), MS. AISHWARYA ARYA (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

Disclosed is a milk vending system comprising a housing configured to contain and dispense milk. A digital display is integrated into said housing, wherein said digital display shows realtime milk availability, pricing, and promotional information. A touch interface is operatively connected to said digital display, wherein said touch interface enables a user to select milk types and quantities. A plurality of sensors are positioned within said housing, wherein said plurality of sensors detect milk levels and temperature. A secure payment system is integrated into said housing, wherein said secure payment system supports multiple payment options including mobile payments and contactless cards. A communication module is operatively connected to said plurality of sensors and said digital display, wherein said communication module transmits data regarding milk levels, temperature, and user interactions to a remote server.

ROBOTIC FLOOR CLEANING SYSTEM FOR HOTEL ENVIRONMENTS

APPLICATION NO.: 202511018305

INVENTORS:

SAURABH TRIPATHI(SCHOOL OF HOTEL MANAGEMENT),

ABSTRACT

Disclosed is a robotic floor cleaning system for hotel environments comprising a chassis, drive motors secured to the chassis, and cleaning brushes operatively connected to the drive motors. A suction apparatus is linked to the cleaning brushes via a filtration unit. Navigation sensors are associated with the cleaning brushes. A docking station is provided for the robotic floor cleaning system. A control unit is connected to the navigation sensors and the suction apparatus.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HOTEL GUEST AUTHENTICATION AND ACCESS SYSTEM FOR IN-ROOM AMENITIES

APPLICATION NO.: 202411099228

INVENTORS:

SAURABH TRIPATHI , SCHOOL OF HOTEL MANAGEMENT , CSJM UNIVERSITY KANPUR

ABSTRACT

Disclosed is a system for controlling access to hotel guest amenities. The system includes a housing structure with a biometric scanner for user authentication. A locking unit works in conjunction with the biometric scanner, enabling the release of a stored item. A spring-loaded release unit adjacent to the locking unit transfers the stored item upon activation. A pivot arm extends from the release unit to the stored item, facilitating the item transfer. A return module affixed to the pivot arm resets the pivot arm to a secure position after the item is accessed.

SMART FIRE MANAGEMENT SYSTEM THROUGH IOT BASED BIG DATA ANALYTICS IN HOTELS OR RESTAURANT

APPLICATION NO.: 202511018305

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

Disclosed is a system for fire management in hospitality environments, comprising a plurality of Internet of Things (IoT) sensors deployed throughout said hospitality environment, wherein said IoT sensors continuously monitor environmental parameters including temperature, humidity, smoke levels, and occupancy. A data processing unit receives real-time data from said plurality of IoT sensors. An analysis module integrated into said data processing unit applies big data analytics techniques to detect anomalies and predict potential fire hazards based on said real-time data and historical data. An alert generation unit triggers real-time alerts upon detection of said anomalies or predicted fire hazards. A control interface provides facility managers with dashboards that display detailed reports, predictive analytics, and automated response actions based on said analysis module.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

INNOVATIVE SYSTEM AND METHOD FOR KEY GENERATION IN AUTHENTICATION AND KEY MANAGEMENT FOR APPLICATIONS

APPLICATION NO.: 202411043423

INVENTORS:

SHIVANSHU SACHAN (SCHOOL OF HOTEL MANAGEMENT), ASTHA SHUKLA (SCHOOL OF BUSINESS MANAGEMENT), SAKSHI SHUKLA (SCHOOL OF BUSINESS MANAGEMENT), ANKIT KUMAR (SCHOOL OF HOTEL MANAGEMENT)

ABSTRACT

Disclosed is a system for key generation in authentication and key management for applications. The system comprises one or more processors; a non-transitory computer readable medium having embodied thereon, a computer executable program code, configured to cause the one or more processors to execute: a plurality of cryptographic primitives configured to enhance key generation efficiency, security, and scalability; a plurality of protocols coupled with said cryptographic primitives, wherein said protocols are configured to provision keys to authorized entities; and a security module configured to mitigate risks associated with key compromise or interception, wherein said security module operates in conjunction with said cryptographic primitives and said protocols.

ANAEROBIC DIGESTION SYSTEM FOR CONVERTING FOOD WASTE INTO ENERGY AND COMPOST

APPLICATION NO.: 202411099275

INVENTORS:

NAME OF INVENTOR(S): MR. SHIVANSU SACHAN

DEPARTMENT: SCHOOL OF HOTEL MANAGEMENT

ABSTRACT

Disclosed is an anaerobic digestion system for converting food waste into energy and compost, comprising a digestion chamber arranged to receive food waste through an inlet conduit. A biogas collection unit is positioned above said digestion chamber to capture biogas generated during digestion. A temperature regulation unit is affixed to said digestion chamber to maintain optimal anaerobic conditions. A compost extraction unit in fluid communication with said digestion chamber enables the retrieval of composted material and facilitates continuous flow of processed compost. An energy conversion unit is integrated with said biogas collection unit to produce energy from collected biogas, operably coupled to enable efficient energy generation

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

AUTOMATED BEVERAGE DISPENSING AND RECYCLING STATION

APPLICATION NO.: 202511018302

INVENTORS:

SAURABH TRIPATHI(SCHOOL OF HOTEL MANAGEMENT),

ABSTRACT

Disclosed is an automated beverage dispensing and recycling station comprising a dispensing unit adjacent to a recycling unit. Sensors are linked to the dispensing unit, and a transport unit connects the recycling unit and the dispensing unit. A control interface is operatively coupled to the sensors and transport unit to enable control of the dispensing and recycling processes. The station enables automated beverage dispensing while managing recycling of used containers.

INTEGRATED MOTION-SICKNESS REDUCTION SYSTEM FOR VIRTUAL HOTEL TOURS

APPLICATION NO.: 202411099270

INVENTORS:

NAME OF INVENTOR(S): MR. SHIVANSU SACHAN,PRAVEEN KATIYAR,PRAVEEN BHAI PATEL

DEPARTMENT: SCHOOL OF HOTEL MANAGEMENT, SCHOOL OF HEALTH SCIENCE,UIET

ABSTRACT

Disclosed is an integrated motion-sickness reduction system for virtual hotel tours comprising a motion tracking unit, comprising gyroscopes and accelerometers, detecting head movement and user acceleration. A variable aperture mechanism is mechanically associated with said motion tracking unit, adjusting a field of view corresponding to said movement. A dynamic blurring mechanism, operatively related to said variable aperture mechanism and motion tracking unit, applies controlled blur during rapid movements to reduce disorientation during virtual hotel exploration.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

INTEGRATED SYSTEM FOR REAL-TIME HOTEL EXPLORATION USING TRANSPARENT OLED DISPLAY

APPLICATION NO.: 202411099269

INVENTORS:

NAME OF INVENTOR(S):
MR. SHIVANSU SACHAN,PRAVEEN KATIYAR,PRAVEEN BHAI PATEL

DEPARTMENT: SCHOOL OF HOTEL MANAGEMENT, SCHOOL OF HEALTH SCIENCE,UIET

ABSTRACT

Disclosed is an integrated system for real-time hotel exploration. A transparent OLED display is operatively linked to a depth sensing unit. The display overlays digital information on a hotel environment. A camera array is associated with the depth sensing unit and captures the environment. A processor is in communication with the display and the camera array. The processor controls transitions between augmented reality and virtual reality modes, enabling seamless exploration of hotel spaces.

AUTOMATED HOTEL CLEANING AND DISINFECTION

APPLICATION NO.: 202411071560

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The Disclosed is a system for automated cleaning and disinfection of hotel rooms and common areas, comprising a plurality of autonomous robots, each incorporating a navigation system with sensors for obstacle detection and path planning. The system includes a disinfection mechanism on said autonomous robots, wherein said disinfection mechanism comprises ultraviolet (UV) light emitters, electrostatic sprayers, and high-efficiency particulate air (HEPA) filters. A control unit is communicatively coupled with said autonomous robots, wherein said control unit comprises a processor executing artificial intelligence (AI) algorithms for room layout adaptation and cleaning optimization. A communication interface connects said control unit to a central network, wherein said network enables remote monitoring and data transmission regarding cleaning performance. An energy source is configured to power said autonomous robots during extended operation periods.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

DYNAMIC PRICING OPTIMIZATION SYSTEM FOR REVENUE MANAGEMENT

APPLICATION NO.: 202411071558

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure discloses a dynamic pricing optimization system for revenue management, the system comprising a data collection unit to aggregate real-time and historical data from at least one of sales transactions, competitor pricing, inventory levels, and customer behavior patterns. A demand forecasting engine utilizes predictive analytics and machine learning models to forecast demand based on aggregated data, taking into account at least one of seasonality, economic indicators, and external factors. A pricing algorithm unit determines optimal price points by balancing supply and demand using at least one of linear programming, regression analysis, or neural networks. An optimization engine dynamically adjusts prices in real-time to ensure alignment with business revenue goals while maintaining competitiveness. A sales channel integration interface synchronizes pricing strategies across at least one of online platforms, mobile applications, or physical store sales channels in

PERSONALIZED HOTEL MENU AND NUTRITION PLANNING SYSTEMEL CLEANING AND DISINFECTION

APPLICATION NO.: 202411071554

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure discloses a personalized hotel menu and nutrition planning system, comprising a guest profile management component configured to collect and store guest dietary preferences, dietary restrictions, allergies, and health goals. An artificial intelligence engine operatively connected to said guest profile management component, said artificial intelligence engine configured to analyze the collected guest data and generate personalized menu recommendations based on nutritional needs, caloric intake, ingredient availability, and culinary preferences.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ROBOTIC AUTOMATED GUEST CHECK-IN SYSTEM FOR A HOTEL RECEPTION DESK

APPLICATION NO.: 202411066357

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure discloses a robotic automated guest check-in system for a hotel reception desk, comprising a motorized base with omni-wheels, said motorized base enabling smooth and versatile navigation within the reception area; a main body attached to said motorized base; articulated arms comprises the multiple joints, said articulated arms being attached to said main body and configured to perform tasks such as handing over room keys and assisting guests with their luggage; servo motors integrated within said main body, said servo motors providing precise and controlled movement of the robot's joints, including said articulated arms and a head; a facial recognition camera mounted on a gimbal, said facial recognition camera being connected to said main body and facilitating accurate guest identification from various angles; a touch screen display integrated into said main body, said touch screen display serving as an interface for guests to input information and receive visual feedback during the check-in process.

ANALYSIS OF HERBAL COMPOSITION FOR INFLAMMATORY DISORDERS

APPLICATION NO.: 202411066356

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure discloses a system for analyzing herbal compositions for managing inflammatory disorders, said system comprising: an analytical unit configured to identify and quantify biochemical constituents of herbal compositions using high-performance liquid chromatography (HPLC) and mass spectrometry; a pharmacological analysis unit configured to evaluate the pharmacological mechanisms of said biochemical constituents, including inhibition of NF-kB activation, reduction of pro-inflammatory cytokine production, and interference with leukotriene synthesis; a bioavailability enhancement unit configured to improve the bioavailability of said biochemical constituents through formulation adjustments, extraction methods, and novel drug delivery systems;

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR ENHANCING CUSTOMER SATISFACTION IN HOTEL SERVICES

APPLICATION NO.: 202411071549

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure discloses a system for enhancing customer satisfaction in hotel services, comprising a data acquisition unit configured to collect feedback from guests regarding hotel services; a service quality analysis unit operatively connected to said data acquisition unit, wherein said service quality analysis unit is adapted to process feedback data using predetermined metrics for service evaluation; a staff training unit adapted to provide continuous skill development to hotel employees based on analyzed feedback and service quality standards; a service consistency management unit configured to ensure uniformity in service delivery across different departments of the hotel; a guest relationship management system integrated with said service quality analysis unit, wherein said guest relationship management system is adapted to store guest profiles and preferences for personalized service provision; a responsive problem resolution system operatively connected to said guest relationship management system, wherein said responsive problem resolution system is adapted to address guest complaints in real-time.

SYSTEM AND METHOD FOR PREDICTING THE SHELF LIFE OF FRUITS AND VEGETABLES

APPLICATION NO.: 202411044429

INVENTORS:

SHIVANSHU SACHAN (SCHOOL OF HOTEL MANAGEMENT), ASTHA SHUKLA (SCHOOL OF BUSINESS MANAGEMENT), SAKSHI SHUKLA (SCHOOL OF BUSINESS MANAGEMENT), ANKIT KUMAR (SCHOOL OF HOTEL MANAGEMENT), ARVIND CHAUHAN (SCHOOL OF HOTEL MANAGEMENT), AISHWARYA ARYA (SCHOOL OF HOTEL MANAGEMENT)

ABSTRACT

The present disclosure discloses a system for predicting the shelf life of fruits and vegetables, comprising a vacuum chamber configured to contain a solution and fresh-cut fruits or vegetables; a vacuum pump operatively connected to said vacuum chamber, wherein said vacuum pump is configured to create a vacuum within said vacuum chamber to facilitate impregnation of said solution into the fruits or vegetables; a valve for controlling the vacuum within said vacuum chamber.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HOTEL REVENUE OPTIMIZATION TOOL USING BIG DATA ANALYTICS

APPLICATION NO.: 202411043429

INVENTORS:

SAURABH TRIPATHI (SCHOOL OF HOTEL MANAGEMENT)

ABSTRACT

The present disclosure provides a hotel revenue optimization tool comprising one or more processors; a non-transitory computer readable medium having embodied thereon, a computer executable program code, configured to cause the one or more processors to execute a data integration module configured to receive and integrate data streams from booking platforms, weather forecasts, local events calendars, and historical occupancy rates; a data analysis module operable to apply machine learning mechanisms on integrated data streams, wherein said mechanisms are configured to dynamically adjust pricing strategies, room allocation, and promotional offers; a trend identification module configured to analyze integrated data streams to identify trends, patterns, and correlations to facilitate precise demand forecasting and optimization of inventory distribution; and a sentiment analysis module configured to employ sentiment analysis mechanisms to analyze guest reviews and gauge guest satisfaction.

PLANT-BASED EGG ALTERNATIVES WITH ENHANCED TEXTURE AND TASTE

APPLICATION NO.: 202411066361

INVENTORS:

MR. ARVIND CHAUHAN (SCHOOL OF HOTEL MANAGEMENT),
MR.SAURABH TRIPATHI (SCHOOL OF HOTEL MANAGEMENT),
MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides a plant-based egg alternative composition comprising protein-rich legume flour selected from chickpea flour, pea protein isolate, or soy flour, in an amount ranging from 40% to 50% of the dry ingredient mix; a gelling agent selected from agar-agar, carrageenan, or pectin, in an amount ranging from 0.5% to 2% of the total formulation; an emulsifier selected from lecithin, guar gum, or xanthan gum, in an amount ranging from 0.5% to 1.5% of the total formulation; a flavor enhancer selected from salt, nutritional yeast, onion powder, garlic powder, or specific savory or umami flavors, in an amount ranging from 0.5% to 2% of the total formulation.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SMART KITCHEN SCALES AND MEASURING SYSTEMS

APPLICATION NO.: 202411071557

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides a smart kitchen scale system comprising a scale platform for receiving ingredients, a plurality of sensors operatively coupled to said scale platform, wherein said sensors detect weight and type of ingredients placed on said scale platform, and a processing unit communicatively connected to said sensors. Said processing unit executes instructions stored in a memory to automatically convert measurement units between different formats based on user input or pre-programmed settings, provide real-time nutritional information of said ingredients based on weight and type data, and suggest ingredient substitutions from a database based on user preferences, ingredient availability, and dietary restrictions.

SEA WATER DESALINATION APPARATUS USING SOLAR ENERGY

APPLICATION NO.: 202411071555

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides a solar-powered desalination apparatus for converting saline water into potable water, comprising a solar energy collection unit harnessing solar energy, a thermal desalination unit operatively coupled to said solar energy collection unit to evaporate saline water and condense desalinated water, a water supply conduit in fluid communication with said thermal desalination unit to deliver saline water to such thermal desalination unit, a condensation chamber operatively coupled to said thermal desalination unit to collect desalinated water, a heat exchange unit to preheat saline water before entry into said thermal desalination unit using heat from desalinated water, a solar-powered water pump regulating the flow of saline water into said water supply conduit, and a filtration system operatively connected to said condensation chamber to remove residual impurities from desalinated water.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

COMMUNICATION SYSTEM VIRTUAL NETWORK MANAGEMENT

APPLICATION NO.: 202411043415

INVENTORS:

SHIVANSHU SACHAN (SCHOOL OF HOTEL MANAGEMENT),
ASTHA SHUKLA (SCHOOL OF BUSINESS MANAGEMENT),
SAKSHI SHUKLA (SCHOOL OF BUSINESS MANAGEMENT),
ANKIT KUMAR (SCHOOL OF HOTEL MANAGEMENT),
DR. VIVEK SINGH SACHAN (SCHOOL OF BUSINESS MANAGEMENT)

ABSTRACT

The present disclosure provides a system for controlling and optimizing virtual network resources in a communication system. The system comprises one or more processors; a nontransitory computer readable medium having embodied thereon, a computer executable program code configured to cause the one or more processors to execute a network administration framework. The network administration framework is configured to monitor a plurality of virtual network elements in real-time, configure the plurality of virtual network elements, dynamically allocate resources to the plurality of virtual network elements, and adjust the plurality of virtual network elements using adaptive routing strategies. The network administration framework facilitates agile management of the virtual network elements, thereby enabling an organization to adapt swiftly to evolving communication demands, ensuring optimal utilization of resources, and delivering superior user experiences.

INTELLIGENT REFRIGERATION AND FOOD STORAGE

APPLICATION NO.: 202411071563

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides a system for intelligent refrigeration and food storage comprising a storage compartment for housing perishable items, a sensor array configured to detect the type, quantity, and condition of said perishable items within such storage compartment, a control unit communicatively coupled to said sensor array, wherein such control unit is programmed to receive and process data from said sensor array, a display interface operably connected to said control unit, wherein such display interface presents information related to expiration dates and storage conditions of said perishable items.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

INTERACTIVE SYSTEMS FOR PERSONALIZED GUEST ENGAGEMENT AND INTEGRATED ROOM CONTROL IN HOSPITALITY SETTINGS

APPLICATION NO.: 202511018280

INVENTORS:

MR. ARVIND CHAUHAN(SCHOOL OF HOTEL MANAGEMENT),
DR. MRIDULESH SINGH(SCHOOL OF BUSINESS MANAGEMENT),
MR. SAURABH TRIPATHI(SCHOOL OF HOTEL MANAGEMENT),

ABSTRACT

The present disclosure provides a system for interactive guest engagement and room control integration in hospitality settings. A reflective surface houses a high-resolution display operably connected to a processing unit. Embedded sensors include proximity and ambient light sensors for detecting user presence and adjusting brightness. A control interface includes capacitive touch sensors and built-in microphones for gesture-based and voice-based interactions. A connectivity system, comprising Wi-Fi and Bluetooth components, synchronizes with external devices and hotel systems. A user interface displayed on the highresolution display delivers personalized content and controls room elements such as lighting, temperature, and entertainment systems. A data security subsystem with encrypted connections and user authentication safeguards communication and data access.

ADVANCED HOTEL AIR QUALITY MONITORING AND PURIFICATION

APPLICATION NO.: 202411071556

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides a system for monitoring and purifying indoor air quality in a hotel environment, comprising a plurality of sensors to detect and measure concentrations of airborne particulate matter, volatile organic compounds, carbon dioxide, carbon monoxide, nitrogen dioxide, and other airborne pollutants. A real-time data analytics unit is operatively connected to said plurality of sensors to continuously process air quality data. An artificial intelligence unit analyzes historical air quality data to predict potential issues and generate corrective action recommendations. A purification unit comprising at least one HEPA filter, activated carbon filter, and UV-C light source captures and deactivates pollutants and microorganisms.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR ASSESSMENT OF EMPLOYEE PERFORMANCE AND ENGAGEMENT

APPLICATION NO.: 202411071545

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides a system for providing assessment of employee performance and engagement, comprising a data consolidation unit that collects data from multiple sources including performance reviews, productivity metrics, and employee feedback. An artificial intelligence (AI) engine is operably connected to said data consolidation unit to process said collected data using machine learning (ML) techniques. A predictive analytics engine is operably connected to said AI engine to generate future performance trends based on said processed data. An engagement analysis unit evaluates employee engagement based on said processed data. A decision support engine provides strategic recommendations based on said performance trends and engagement analysis. Said system enables comprehensive analysis and strategic decision-making regarding employee performance, engagement, and potential.

SYSTEM AND METHOD FOR REAL-TIME EMPLOYEE PERFORMANCE MONITORING AND FEEDBACK

APPLICATION NO.: 202411043428

INVENTORS:

SHIVANSHU SACHAN (SCHOOL OF HOTEL MANAGEMENT),
ASTHA SHUKLA (SCHOOL OF BUSINESS MANAGEMENT),
SAKSHI SHUKLA (SCHOOL OF BUSINESS MANAGEMENT),
ANKIT KUMAR (SCHOOL OF HOTEL MANAGEMENT),
ARVIND CHAUHAN (SCHOOL OF HOTEL MANAGEMENT),
AISHWARYA ARYA (SCHOOL OF HOTEL MANAGEMENT)

ABSTRACT

The present disclosure provides a system for real-time monitoring and feedback of employee performance. The system includes one or more processors and a non-transitory computer readable medium with a program code, which causes the processors to execute several modules. A data analytics module tracks key performance indicators in real-time while a machine learning module applies mechanisms for providing insights into employee performance based on the tracked indicators. An integration interface couples with existing human resources systems and communication platforms. A feedback mechanism enables managers to provide timely coaching and support to employees.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

TEMPERATURE-CONTROLLED GLASSWARE SYSTEM FOR BEVERAGES

APPLICATION NO.: 202511018298

INVENTORS:

MR. ARVIND CHAUHAN(SCHOOL OF HOTEL MANAGEMENT),
MR. SAURABH TRIPATHI(SCHOOL OF HOTEL MANAGEMENT),
DR. MRIDULESH SINGH(SCHOOL OF BUSINESS MANAGEMENT),

ABSTRACT

The present disclosure provides a temperature-controlled glassware system for beverages, comprising a glass structure formed from heat-resistant borosilicate glass. A thermoelectric device integrated within the base of the glass structure includes a Peltier element for regulating the temperature of a liquid contained within such glass structure. A sensor arrangement operatively coupled to such thermoelectric device monitors the temperature of the liquid and provides feedback to maintain a predetermined temperature range. A power source electrically connected to such thermoelectric device is rechargeable. A temperature control interface is configured to adjust the temperature settings based on user input. A wireless communication module operatively coupled to such temperature control interface communicates with an external device for remote operation.

VOICE-POWERED VIRTUAL ASSISTANT SYSTEM FOR HOTEL GUEST SUPPORT

APPLICATION NO.: 202411071559

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides a voice-powered virtual assistant system for hotel guest support, comprising a voice recognition component configured to receive and process voice commands from a guest. A natural language processing component is operatively connected to said voice recognition component, wherein said natural language processing component is configured to interpret said voice commands and generate appropriate responses. A guest profile management component is operatively connected to said natural language processing component, said guest profile management component configured to store and retrieve guest preferences, behaviors, and contextual information.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

AUGMENTED REALITY TRAINING SYSTEM

APPLICATION NO.: 202411043416

INVENTORS:

SHIVANSHU SACHAN (SCHOOL OF HOTEL MANAGEMENT),
ASTHA SHUKLA (SCHOOL OF BUSINESS MANAGEMENT),
SAKSHI SHUKLA (SCHOOL OF BUSINESS MANAGEMENT),
ANKIT KUMAR (SCHOOL OF HOTEL MANAGEMENT),
DR. VIVEK SINGH SACHAN (SCHOOL OF BUSINESS MANAGEMENT)

ABSTRACT

The present disclosure provides an augmented reality training system (ARTS) comprising: an augmented reality device configured to overlay digital information, instructions, and simulations onto a physical workspace; a plurality of interactive modules stored on a non-transitory computer-readable medium, each module configured to simulate real-world scenarios; a processor coupled to the augmented reality device and the non-transitory computer-readable medium, wherein the processor is programmed to execute the interactive modules, enabling a user to interact with and respond to the simulated scenarios; and an interface configured to receive user inputs and to adjust the digital information, instructions, and simulations based on the user inputs, thereby personalizing the training session according to user interaction and performance within a risk-free environment.

ENERGY-HARVESTING HOTEL BUILDINGS

APPLICATION NO.: 202411071561

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides an energy-harvesting system for a hotel building, comprising a plurality of solar windows embedded with transparent photovoltaic cells, said solar windows capturing solar energy and converting such solar energy into electrical power. A plurality of kinetic flooring units comprising piezoelectric materials is included, said kinetic flooring units generating electrical power through conversion of kinetic energy from human movement. An energy management system is operatively connected to said solar windows and said kinetic flooring units, said energy management system monitoring, regulating, and storing electrical power generated by said solar windows and said kinetic flooring units. A power distribution unit is electrically connected to said energy management system.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

INTELLIGENT HOTEL ENERGY MANAGEMENT SYSTEM FOR OPTIMIZING ENERGY CONSUMPTION

APPLICATION NO.: 202411071562

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides an intelligent hotel energy management system for optimizing energy consumption in a hotel environment. The system comprises a plurality of sensors configured to detect occupancy levels, motion, temperature, humidity, and light levels within guest rooms and common areas. A central processing unit is operatively connected to said plurality of sensors, wherein said central processing unit is programmed to receive and analyze real-time data from said sensors. A control unit is operatively connected to lighting systems, heating, ventilation, and air conditioning (HVAC) systems, wherein said control unit adjusts said lighting systems and said HVAC systems based on said real-time data. A storage unit is configured to store historical occupancy data and guest preferences, wherein said historical occupancy data and guest preferences are utilized to predict future occupancy trends. A guest interface allows guests to input preferences for temperature, lighting, and entertainment settings.

MACHINE LEARNING BASED SYSTEM FOR MONITORING AND ANALYSIS THE ENVIRONMENT IN THE KITCHEN

APPLICATION NO.: 202411066367

INVENTORS:

MR. SHIVANSU SACHAN (SCHOOL OF HOTEL MANAGEMENT),
DR PRAVEEN BHAI PATEL (DEPARTMENT OF CHEMICAL ENGINEERING, UIET),
DR MRIDULESH SINGH (SCHOOL OF HOTEL MANAGEMENT),
MR. ANKIT KUMAR (SCHOOL OF HOTEL MANAGEMENT),
MR. AISHWARYA ARYA (SCHOOL OF HOTEL MANAGEMENT),
MR. ARVIND CHAUHAN (SCHOOL OF HOTEL MANAGEMENT),
MR. SAURABH TRIPATHI (SCHOOL OF HOTEL MANAGEMENT, CSJMU)

ABSTRACT

The system for monitoring and analyzing environmental conditions within a kitchen environment comprises a network of sensors, a machine learning-based analysis unit, a temperature monitoring component, and an alert generation unit. The network of sensors gathers data on temperature, humidity, air quality, and noise levels. The machine learning-based analysis unit processes and analyzes the gathered data. The temperature monitoring component detects deviations from safe temperature ranges in refrigeration units and cooking equipment based on data from the sensors.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR ENHANCING IMPLEMENTATION OF GREEN BANKING INITIATIVES IN A BANKING INSTITUTION

APPLICATION NO.: 202411099266

INVENTORS:

PROF. SUDHANSHU PANDIYA, PROFESSOR, MR. PRAKASH NARAIN PANDEY, ASSISTANT PROFESSOR,DR. PRASHANT TRIVEDI, ASSISTANT PROFESSOR,MR. MANOJ KUMAR, ASSISTANT PROFESSOR,MR. RAHUL AGARWAL, ASSISTANT PROFESSOR, MR. PRABHAKAR SINGH TOMAR, RESEARCH SCHOLAR, MS. VAISHALI CHANDWANI, RESEARCH SCHOLAR,MR. ANIL KUMAR TRIPATHI, INCUBATION CENTRE.

ABSTRACT

The present disclosure provides a method for enhancing the implementation of green banking initiatives within a banking institution. The method includes providing training to bank employees on green banking practices and facilitating development of technological proficiency in said employees. The method further promotes customer engagement with green banking products through employee interaction. The method increases operational efficiency by incorporating digital tools into green banking processes. Additionally, the method measures the effectiveness of green banking initiatives by obtaining feedback from employees and customers. Such a method enables improved customer satisfaction, operational efficiency, and the adoption of sustainable banking practices within said institution.

PLATFORMS ENHANCING TRANSPARENCY AND REPORTING FOR GREEN BOND INVESTMENTS

APPLICATION NO.: 202411066341

INVENTORS:

MR. PRABHAKHAR SINGH TOMAR (SCHOOL OF BUSINESS MANAGEMENT),
DR. PRASHANT TRIVEDI (SCHOOL OF BUSINESS MANAGEMENT),
MS. VAISHALI CHANDWANI (SCHOOL OF BUSINESS MANAGEMENT),
MR. MANOJ KUMAR (SCHOOL OF BUSINESS MANAGEMENT),
MR. PRAKASH NARAIN PANDEY (SCHOOL OF BUSINESS MANAGEMENT),
MR. RAHUL AGARWAL (SCHOOL OF BUSINESS MANAGEMENT, CSJMU)

ABSTRACT

The present disclosure provides a system for facilitating the issuance and reporting of green bonds, comprising a project assessment module configured to define and verify eligibility criteria for green projects based on predefined environmental standards; a framework development module configured to assist issuers in developing a framework that outlines the allocation of green bond proceeds to specific projects and ensures ongoing reporting commitments; an issuance certification module configured to support the certification and labeling of green bonds by recognized environmental bodies; an investor communication module configured to provide transparency tools for communicating bond objectives.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR TEACHING BOTH ENGLISH AND HINDI MEDIUM STUDENTS ONLINE SIMULTANEOUSLY

APPLICATION NO.: 202411051906

INVENTORS:

DR. NAJMI SHABBIR (SCHOOL OF BUSINESS MANAGEMENT)

ABSTRACT

A system is disclosed for teaching both English and Hindi medium students online simultaneously. The system includes a first set of digital presentation slides prepared in the English language and a second set of digital presentation slides prepared in the Hindi language. A presentation module is configured to display the first and second sets of slides sequentially. An online teaching platform hosts the presentation module and facilitates interaction between an instructor and students. A display control unit manages the sequence and timing of the slides, while a user interface allows the instructor to select and control the display of the slides. A synchronization module ensures that the content presented in the first set of slides corresponds to the content presented in the second set of slides. The system addresses the challenge of teaching bilingual students in an online environment by providing synchronized and controlled presentation of educational content in both languages.

SYSTEM FOR ENHANCING ECONOMIC DEVELOPMENT THROUGH SMARTPHONE DISTRIBUTION TO FARMERS IN RURAL AREAS

APPLICATION NO.: 202411051915

INVENTORS:

DR. NAJMI SHABBIR (DEPARTMENT OF COMMERCE, SCHOOL OF BUSINESS MANAGEMENT)

ABSTRACT

Disclosed is a system for enhancing economic development through smartphone distribution to farmers in rural areas, the system comprising a distribution module configured to facilitate the allocation and distribution of smartphones to farmers in rural areas, a training module integrated within said smartphones, wherein said training module provides instructional content in local languages, interactive videos, puzzle games, and situation-based tasks to educate farmers on modern farming methods and agricultural practices, a market information module configured to provide real-time data on crop market prices, future price predictions, and trading opportunities, a feedback and support module designed to enable farmers to share queries and receive expert advice in real-time through a helpline and support chat in local languages, a regular update mechanism configured to deliver periodic updates related to farming techniques, weather forecasts, soil health, and crop management, a monitoring and evaluation module for tracking and analyzing the usage of smartphones for agricultural activities, and assessing the impact on crop productivity and economic development, and an offline access feature enabling the use of training content and agricultural information without the need for continuous internet connectivity.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR MAXIMIZING THE NUMBER OF ADMISSIONS AT THE POSTGRADUATE LEVEL

APPLICATION NO.: 202411051913

INVENTORS:

DR. NAJMI SHABBIR (DEPARTMENT OF COMMERCE, SCHOOL OF BUSINESS MANAGEMENT)

ABSTRACT

The present disclosure provides a system for maximizing the number of admissions at the postgraduate level, said system comprising: a result declaration module configured to declare the final results of graduate students at a predetermined time; a timing adjustment module operatively connected to said result declaration module, wherein said timing adjustment module is configured to delay the declaration of final results until after the declaration of results by competing institutions; an admissions monitoring module configured to monitor the admissions processes of competing institutions; a strategy formulation module operatively connected to said admissions monitoring module, wherein said strategy formulation module is configured to formulate strategies to attract potential postgraduate candidates based on monitored admissions data; a communications module configured to disseminate information regarding the timing of result declarations and admissions processes to prospective students; an analytics module configured to analyze data related to admissions trends and outcomes to optimize the timing and strategy for result declarations and admissions.

SYSTEM FOR FACILITATING THE BUYING AND SELLING OF FARM ANIMALS IN RURAL AREAS

APPLICATION NO.: 202411051909

INVENTORS:

MS SHALINI PORWAL (DEPARTMENT OF COMMERCE, SCHOOL OF BUSINESS MANAGEMENT),
DR. NAJMI SHABBIR (DEPARTMENT OF COMMERCE, SCHOOL OF BUSINESS MANAGEMENT)

ABSTRACT

The present disclosure relates to a system for facilitating the buying and selling of farm animals in rural areas. The system comprises an application installed on smartphones, wherein the application enables users to list farm animals for sale and to browse listings of farm animals for purchase. A database connected to the application stores information related to the listings, including types of animals, breeds, prices, and locations. The system further includes a communication module within the application that enables direct messaging between buyers and sellers, a location tracking module integrated into the application that provides geographical information about the animals listed for sale, and a payment processing module within the application that facilitates secure transactions between buyers and sellers.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

FREEHAND PHYSIOTHERAPY ULTRASOUND THERAPY SYSTEM

APPLICATION NO.: 202411099264

INVENTORS:
DR. NEHA SHUKLA

ABSTRACT

The present disclosure provides a freehand physiotherapy ultrasound system for treating musculoskeletal disorders. The system includes a control unit that regulates parameters such as frequency, time duration, and intensity. An ultrasound transducer head attached to said control unit contains a quartz crystal converting electrical energy into mechanical vibrations as high-frequency sound waves. A coupling medium applied to either said transducer head or a patient's skin enables sound wave transmission into tissue. A mounting structure secures said transducer head over a target area, where the sound waves cause thermal and nonthermal effects in tissue, stimulating micro-vibrations, promoting blood flow, and enhancing tissue healing.

BALANCE AND COORDINATION TRAINING MAT WITH PRESSURE SENSORS AND VISUAL FEEDBACK

APPLICATION NO.: 202411099283

INVENTORS:
POOJA(SCHOOL OF HEALTH SCIENCES), GAURAV MISHRA(SCHOOL OF HEALTH SCIENCES), DR. HINA VAISH (PT)(SCHOOL OF HEALTH SCIENCES), DR. AAKANKSHA BAJPAI (PT)(SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAV(SCHOOL OF HEALTH SCIENCES), DR. UMESH KUMAR MAURYA (PT)(SCHOOL OF HEALTH SCIENCES), DR DIGVIJAY SHARMA (PT)(SCHOOL OF HEALTH SCIENCES), DR. CHANDRA SHEKHAR KUMAR (PT)(SCHOOL OF HEALTH SCIENCES), DR. NEHA SHUKLA (PT)(SCHOOL OF HEALTH SCIENCES)

ABSTRACT

Disclosed is a balance and coordination training mat comprising a plurality of pressure sensors, each disposed on distinct sections of the mat to detect pressure exerted by a user and generate corresponding sensor data. A plurality of light-emitting elements disposed on the mat provide visual feedback to the user in response to the sensor data. A central microcontroller is operatively connected to the pressure sensors and light-emitting elements to receive, process, and activate specific light-emitting elements based on the processed sensor data. The mat further includes a plurality of connectors along its edges to detachably connect multiple sections of the mat while maintaining electrical connections between the pressure sensors, light-emitting elements, and the microcontroller. An external power source is operatively connected to the microcontroller to power the pressure sensors and light-emitting elements.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

COLLAPSIBLE WALL APPARATUS FOR PREVENTING FORWARD MOVEMENT IN SIDE STRETCH EXERCISES

APPLICATION NO.: 202511018348

INVENTORS:

DR RAM KISHORE(DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS),
ANIL KUMAR YADAV(DEPARTMENT OF EDUCATION),
NEELU GOYAL(DEPARTMENT OF EDUCATION),
DR. HINA VAISH (PT)(SCHOOL OF HEALTH SCIENCES),
DR. CHANDRA SHEKHAR KUMAR (PT)(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

Disclosed is a collapsible wall apparatus to prevent compensatory forward movement during side stretch exercises. Said apparatus comprises a frame structure formed of lightweight tubing, an adjustable hinge mechanism enabling folding and unfolding, and pre-set adjustment slots integrated into said frame structure to facilitate height and width modifications. Said apparatus further includes a wall surface formed of soft foam or fabric panels affixed to said frame structure, providing tactile and visual alignment cues. Additionally, at least one non-slip base prevents displacement during use, while securing straps retain said frame structure in an extended position. Said apparatus enhances safety and alignment while being portable and adaptable to different body sizes and practice spaces.

INFANT LACRIMAL DUCT STIMULATION DUMMY WITH OPTIMAL LIGHT SENSOR PLACEMENT

APPLICATION NO.: 202411066366

INVENTORS:

DR UMESH KUMAR MAURYA (PT) (SCHOOL OF HEALTH SCIENCES),
MR. DHEERAJ KUMAR (SCHOOL OF HEALTH SCIENCES),
DR ADARSH KUMAR SRIVASTAV (PT) (SCHOOL OF HEALTH SCIENCE),
DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES),
DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES),
DR CHANDRASHEKHAR KUMAR (PT) (SCHOOL OF HEALTH SCIENCE),
DR AAKANKSHA BAJPAI (PT) (SCHOOL OF HEALTH SCIENCE, CSJMU)

ABSTRACT

Disclosed is a lacrimal gland stimulation system for infants, comprising a dummy structure designed to comfortably fit an infant's eye area, said dummy structure being made of hypoallergenic and soft materials. A light sensor system comprises a light emitting diode (LED) configured to emit harmless light, a photo sensor configured to detect reflected light to confirm correct placement on the lacrimal gland, and an indicator light providing visual confirmation to caregivers. A stimulation delivery system provides controlled stimulation via vibration or massage, with adjustable intensity based on parameters or caregiver input. A microcontroller processes data from the light sensor system and controls the stimulation delivery system, ensuring stimulation occurs only when the dummy structure is correctly positioned.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR IMPROVING THE POPPING EFFICACY OF UNPOPPED CORN KERNELS

APPLICATION NO.: 202411071585

INVENTORS:

DR. ALKA KATIYAR (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

Disclosed is a method for improving the popping efficacy of the unpopped corn kernels, wherein the method comprises soaking the unpopped corn kernels in water, dipping the soaked unpopped corn kernels into a salt solution of 1% - 3% weight/volume, and immersing the salt-dipped unpopped corn kernels in a fat to produce treated unpopped corn kernels having a popping efficiency of 70% to 96%.

PREPARATION OF ALOE VERA JAM.

APPLICATION NO.: 202411066453

INVENTORS:

AAMENA ZAIDI (SCHOOL OF HEALTH SCIENCES),
DR ANAMIKA DIXIT (SCHOOL OF HEALTH SCIENCES),
DR NEHA SHUKLA (PT) (SCHOOL OF HEALTH SCIENCES),
DR ALKA KATIYAR (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

Disclosed is a method for preparing aloe vera jam, comprising obtaining aloe vera leaves and ripe apples; washing said aloe vera leaves and said apples; peeling said aloe vera leaves and said apples; removing seeds and cores from said apples; extracting pulp from said aloe vera leaves and said apples; mixing said aloe vera pulp and said apple pulp in predetermined ratios to form a mixture; adding sugar to said mixture; boiling said mixture with continuous stirring; adding citric acid to said mixture during boiling; judging the endpoint of said jam by performing a sheet test; filling hot said mixture into sterilized bottles; cooling said bottles; and storing said bottles.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

MODIFIED V-SIT AND REACH TEST DEVICE FOR POSTURE AND FLEXIBILITY ASSESSMENT

APPLICATION NO.: 202511018301

INVENTORS:

DR. UMESH KUMAR MAURYA(SCHOOL OF HEALTH SCIENCES),
KOMAL KUMARI(DEPARTMENT OF PHYSIOTHERAPY),
RICHA KUMARI(DEPARTMENT OF PHYSIOTHERAPY),
DR. DIGVIJAY SHARMA(SCHOOL OF HEALTH SCIENCES),
DR. ADARSH KUMAR SRIVASTAVA(SCHOOL OF HEALTH SCIENCES),
DR. DHEERAJ KUMAR(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

Disclosed is a modified V-sit and reach test device comprising a base platform adapted for ergonomic support and providing adjustable distance calibration based on participant dimensions. An adjustable leg positioning assembly integrated with the base platform defines a symmetrical angular arrangement of participant legs through predefined markers. A hand reach measurement assembly extends along the adjustable leg positioning assembly to record forward reach movement relative to the angular arrangement of the predefined markers. A posture alignment guide intersects the hand reach measurement assembly and the base platform to maintain participant posture integrity during operation.

PORTABLE SHOULDER REHABILITATION AND EXERCISE APPARATUS

APPLICATION NO.: 202411066453

INVENTORS:

ANJALI RAGHUWANSHI,
DR. ADARSH KUMAR SRIVASTAV,
DR. DIGVIJAY SHARMA,
SALIHA RAFAT

ABSTRACT

Disclosed is a portable shoulder rehabilitation and exercise apparatus comprising a portable frame structured to provide lightweight support and ease of transport. A rotating shoulder wheel provides adjustable resistance for varying exercise intensities. A gripper is operatively connected to the shoulder wheel and comprises integrated sensors to track vital signs and exercise repetitions. A digital goniometer is embedded to measure and monitor the range of motion of shoulder movements. An adjustable elbow support is arranged to provide stability during internal and external rotation exercises. A height adjustment mechanism is disposed to accommodate different user heights for both the shoulder wheel and the adjustable elbow support. A control interface is structured to monitor exercise data and adjust settings related to resistance and feedback mechanisms.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

REHABILITATION ASSESSMENT SYSTEM WITH ARTIFICIAL INTELLIGENCE-BASED FEEDBACK AND REAL-TIME POSTURE CORRECTION

APPLICATION NO.: 202511018300

INVENTORS:

DR. DIGVIJAY SHARMA(SCHOOL OF HEALTH SCIENCES), DEEPANNITA AWASTHI(SCHOOL OF HEALTH SCIENCES), DR. UMESH KUMAR MAURYA(SCHOOL OF HEALTH SCIENCES), SUNNY GAUTAM(DEPARTMENT OF PHYSIOTHERAPY), DR. CHANDRA SHEKHAR KUMAR (PT)(SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAVA(SCHOOL OF HEALTH SCIENCES), DR . NEHA SHUKLA(SCHOOL OF HEALTH SCIENCES), DR. HINA VAISH (PT)(SCHOOL OF HEALTH SCIENCES), DR. AAKANKSHA BAJPAI (PT)(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

Disclosed is a rehabilitation assessment system comprising a rotatable shoulder wheel including a fulcrum and an adjustable handle, said handle enabling circular motion relative to said fulcrum. A camera is arranged at a predetermined position from said shoulder wheel, said camera capturing movement data corresponding to a patient operating said handle. An artificial intelligence-based feedback unit analyzes said movement data and identifies deviations from predefined movement patterns. An alert mechanism interacts with said feedback unit and is actuated to notify said patient upon detection of said deviations. Said feedback unit interacts with said shoulder wheel to enable real-time posture correction during rehabilitation.

REHABILITATION SYSTEM WITH ADJUSTABLE PARALLEL BARS AND HURDLES

APPLICATION NO.: 202411099256

INVENTORS:

JYOTI OJHA,
DR. CHANDRA SHEKHAR KUMAR (PT),
DR. AAKANKSHA BAJPAI (PT),
DR. HINA VAISH (PT),
DR. NEHA SHUKLA (PT),
DR. ADARSH KUMAR SRIVASTAV,
DR. DIGVIJAY SHARMA,
DR. UMESH MAURYA ((PT), SCHOOL OF HEALTH SCIENCES.

ABSTRACT

Disclosed is a rehabilitation system for improving balance, coordination, and muscle strength. The system comprises a height-adjustable parallel bar assembly, wherein the height adjustment is facilitated by a screw mechanism connected to the ends of the parallel bars. A gear mechanism positioned at the bottom of the screw mechanism enables vertical movement of the parallel bars. A motor assembly operatively connected to the gear mechanism provides power for raising and lowering the parallel bars, wherein the motor assembly is selected from a group consisting of direct current (DC) motors and alternating current (AC) motors. The system further includes a height-adjustable hurdle assembly positioned between the parallel bars, wherein the height adjustment is performed through a rack and pinion mechanism operatively connected to the motor assembly, and a hinge mechanism that enables rotation of the hurdles.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SELF-CLEANING ELECTRODE RETENTION ASSEMBLY

APPLICATION NO.: 202511018282

INVENTORS:

VIVEK SAHU(DEPARTMENT OF PHYSIOTHERAPY), DR. ADARSH KUMAR SRIVASTAVA(DEPARTMENT OF PHYSIOTHERAPY), DR. HINA VAISH (PT)(DEPARTMENT OF PHYSIOTHERAPY), DR. NEHA SHUKLA(DEPARTMENT OF PHYSIOTHERAPY), DR. DIGVIJAY SHARMA(SCHOOL OF HEALTH SCIENCE), DR. CHANDRA SHEKHAR KUMAR (PT)(DEPARTMENT OF PHYSIOTHERAPY), DR. UMESH KUMAR MAURYA(DEPARTMENT OF PHYSIOTHERAPY), DR. AAKANKSHA BAJPAI (PT)(DEPARTMENT OF PHYSIOTHERAPY),

ABSTRACT

Disclosed is a self-cleaning electrode retention assembly comprising a rotary cleaning mechanism mounted circumferentially around an electrode housing, such rotary cleaning mechanism being positioned in rotational alignment with the electrode housing. An enclosure shield is disposed externally to the electrode housing, such enclosure shield being pivotally secured to the electrode housing to facilitate access to the rotary cleaning mechanism. A UV-C radiation strip assembly is positioned internally along opposite sides of the electrode housing, such UV-C radiation strip assembly emitting germicidal radiation with a wavelength of 180-280 nm to sterilize electrodes stored within. A touch-sensitive activation sensor is configured to detect electrode placement within the electrode housing and initiate operation of the UV-C radiation strip assembly. A contaminant collection chamber is situated adjacently to the enclosure shield, such contaminant collection chamber being configured to collect debris removed by the rotary cleaning mechanism. A suction conduit is affixed to the contaminant collection chamber, such suction conduit extending toward a vacuum extractor for automated debris disposal, maintaining operational efficiency of the rotary cleaning mechanism.

SHOULDER ISOMETRIC EXERCISE APPARATUS WITH ALIGNMENT GUIDE AND MOUNTING MECHANISM

APPLICATION NO.: 202411099285

INVENTORS:

DR. NEHA SHUKLA (SCHOOL OF HEALTH SCIENCES),
SAMREEN SIDDIQUI (SCHOOL OF HEALTH SCIENCES).

ABSTRACT

Disclosed is a shoulder isometric apparatus for assisting in performing isometric exercises. The apparatus comprises a base structure that includes a rigid material selected from wood and other durable materials. A cushioning layer made of foam material is applied to the base structure to provide support and comfort. The apparatus includes a mounting mechanism for attaching to a vertical surface, securing the apparatus in a stable position to enable the exercises. An alignment guide positioned on the base structure assists in ensuring correct positioning of the user's shoulder and arm during the exercises, reducing counter pressure on muscles and joints. The apparatus enables the user to perform shoulder isometric exercises by applying force against the cushioning layer while maintaining proper alignment, improving muscle strength, stability, range of motion, and flexibility, while reducing pain and discomfort.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

AI-POWERED X-RAY DETECTOR SYSTEM

APPLICATION NO.: 202411066369

INVENTORS:

MR. DHEERAJ KUMAR (SCHOOL OF HEALTH SCIENCES),
DR ADARSH KUMAR SRIVASTAV (PT) (SCHOOL OF HEALTH SCIENCE),
DR UMESH KUMAR MAURYA (PT) (SCHOOL OF HEALTH SCIENCES),
DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

Disclosed is a Smart X-Ray Detector system comprising an X-ray detector; an AI processing unit operatively connected to said X-ray detector, wherein said AI processing unit is configured to analyze patient data and adjust exposure settings; data input modules configured to collect patient size, anatomy, and medical history information; a control module operatively connected to said AI processing unit, wherein said control module is configured to adjust X-ray machine settings based on AI analysis; a feedback loop facilitating continuous monitoring and adjustment of exposure parameters.

REMOTE ASSESSMENT SYSTEM FOR CONDUCTING SIX-MINUTE WALK TEST (6MWT)

APPLICATION NO.: 202411066358

INVENTORS:

DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES),
DR MAMTA TIWARI (UIET),
DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

Disclosed is a system for conducting a six-minute walk test (6MWT) for remote assessment, comprising a mobile application configured to be installed on a handheld device; a user interface provided by said mobile application, said user interface configured to guide a participant through the six-minute walk test, including pre-test instructions and post-test instructions; a GPS sensor integrated with said handheld device, said GPS sensor configured to measure the distance walked by said participant during the six-minute walk test; a data acquisition module configured to collect personal information of said participant, including age, weight, height, gender, and medical condition; a pre-test measurement module configured to record a modified Borg Scale score of said participant before commencing said six-minute walk test; a post-test measurement module configured to record a modified Borg Scale score of said participant upon completion of said six-minute walk test; a report generation module configured to process data collected during said six-minute walk test, including distance walked and modified Borg Scale scores, and generate a comprehensive report; and a data sharing module configured to enable said participant to share said comprehensive report with healthcare professionals.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

TOE EXTENSION EXERCISE APPARATUS WITH SPRING-LOADED RECEPTACLES

APPLICATION NO.: 202411071582

INVENTORS:

AAKANKSHA BAJPAI (DEPARTMENT OF PHYSIOTHERAPY, SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

Disclosed is a system for controlled toe extension exercises, comprising a base extending longitudinally. A plurality of receptacles, each corresponding to receive a toe, wherein each receptacle comprises a foam cushion lining that contacts the received toe. Each receptacle is connected with the base through a spring that provides resistance to said foam-lined receptacles to enable isolated toe movements to engage extensor muscles

APPARATUS FOR HAND COORDINATION

APPLICATION NO.: 202411071547

INVENTORS:

DR. CHANDRA SHEKHAR KUMAR (PT) (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

Disclosed is a system for coordination training comprising a wire maze with a metallic wire frame, said frame configured with protrusions disposed along an outer perimeter, said protrusions spaced at variable distances and having adjustable heights relative to said metallic wire frame. The system further comprises a metallic ring with overlapping plates that constrict or expand the aperture of said ring. A spring mechanism connected to said overlapping plates regulates the aperture size, and a set of knobs interconnected with said plates allows manual adjustment of said aperture size. A control unit integrated within said metallic ring detects contact between the metallic ring and wire maze, measures the distance traveled, and monitors speed of movement along said wire maze.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR HAND REHABILITATION AND DEXTERITY TESTING

APPLICATION NO.: 202411099284

INVENTORS:

MISS SALIHA RAFAT (SCHOOL OF HEALTH SCIENCES),
DR. ADARSH KUMAR SRIVASTAV (SCHOOL OF HEALTH SCIENCES),
DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES),
MISS ANJALI RAGHUWANSHI (SCHOOL OF HEALTH SCIENCES)

ABSTRACT

Disclosed is a system for hand rehabilitation and dexterity testing. A peg board is provided having a plurality of holes of varying sizes and shapes, each configured to receive a corresponding peg. A set of pegs is dimensioned to fit within the corresponding holes, each peg being associated with a sensor assembly. Multiple motion sensors are embedded on the peg board to detect hand movements during insertion and removal of the pegs. Pressure sensors are connected beneath each peg to measure the applied force. A display unit provides real-time feedback on peg movement, pressure, and elapsed time. A microcontroller processes data from the sensors, and a feedback mechanism provides visual or auditory signals based on peg placement and force. Data storage enables later analysis of the recorded data.

SYSTEM FOR REDUCING RADIATION EXPOSURE IN COMPUTED TOMOGRAPHY (CT) SCANS

APPLICATION NO.: 202411066364

INVENTORS:

MR. DHEERAJ KUMAR (SCHOOL OF HEALTH SCIENCES),
DR UMESH KUMAR MAURYA (PT) (SCHOOL OF HEALTH SCIENCES),
DR ADARSH KUMAR SRIVASTAV (PT) (SCHOOL OF HEALTH SCIENCE),
DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

Disclosed is a system for reducing radiation exposure in computed tomography (CT) scans, comprising a Patient Profiling System configured to create a three-dimensional model of a patient's body based on patient-specific parameters including height, weight, and body mass index (BMI); a Voltage Control Unit operatively connected to said Patient Profiling System, wherein said Voltage Control Unit is configured to dynamically adjust voltage levels of a CT scanner in real-time based on the patient's profile generated by said Patient Profiling System; an Image Quality Monitor operatively connected to said Voltage Control Unit, wherein said Image Quality Monitor is configured to continuously assess image quality and provide feedback to said Voltage Control Unit to adjust said voltage levels accordingly; and a feedback loop facilitating continuous communication between said Patient Profiling System, said Voltage Control Unit, and said Image Quality Monitor.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR SUPPORTING AND ENHANCING COMFORT OF USERS WITH LIMITED MOBILITY

APPLICATION NO.: 202511018286

INVENTORS:

DR. NEHA SHUKLA(SCHOOL OF HEALTH SCIENCES),
SAMREEN SIDDIQUI(DEPARTMENT OF PHYSIOTHERAPY),
PARVEZ KAISER HASHMI(DEPARTMENT OF PHYSIOTHERAPY),

ABSTRACT

Disclosed is a system for supporting users with limited mobility. The system includes a wheelchair frame with wheels, a footrest, and an armrest. A seat structure mounted on the wheelchair frame incorporates a silicone gel tube cushion to distribute pressure evenly and reduce localized stress. A backrest integrated with the wheelchair frame ergonomically supports the upper body. The system enhances user comfort and addresses ergonomic requirements in mobility assistance devices.

GONIOMETERIC MONITORING SYSTEM WITH FEEDBACK

APPLICATION NO.: 202411043426

INVENTORS:

SUNNY GAUTAM (SCHOOL OF HEALTH SCIENCES),
DR. ADARSH KUMAR SRIVASTAVA (PT) (SCHOOL OF HEALTH SCIENCES),
VINAYAK KUMAR PATHAK (IIT KANPUR, KALYANPUR, KANPUR - 208 016),
HIMANSHU GAUTAM (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES),
DR. AKANKSHA BAJPAI (SCHOOL OF HEALTH SCIENCES),
DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES)

ABSTRACT

Disclosed is a system to enable monitoring and assessment of joint range of motion, comprising: a consumer grade camera configured to capture video data of the joint movements of a user; a computing device operably connected to said consumer grade camera, wherein said computing device is configured to receive said video data from said consumer grade camera, utilize a computer vision framework to identify body landmarks from said video data, calculate angles formed between said body landmarks to determine the range of motion of said users joints, generate a real-time assessment report based on said calculated angles; a communication module configured to transmit said real-time assessment report to a remote server or cloud storage for later analysis by medical professionals; a user interface on said computing device, said user interface being configured to display said real-time assessment report to said user and allow for remote video conferencing with medical professionals.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

THERMO-ELECTROTHERAPY APPARATUS WITH MOISTURE RELEASE AND TARGETED HEAT DISTRIBUTION

APPLICATION NO.: 202511018299

INVENTORS:

ANJALI RAGHUWANSHI(SCHOOL OF HEALTH SCIENCES),
SALIHA RAFAT(SCHOOL OF HEALTH SCIENCES),
DR. ADARSH KUMAR SRIVASTAVA(SCHOOL OF HEALTH SCIENCES),
DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES),

ABSTRACT

Disclosed is a thermo-electrotherapy apparatus comprising a fabric layer positioned adjacent to a heating element to facilitate moisture retention and heat transfer. The heating element conducts thermal energy and is arranged in thermal communication with a moisture-retaining layer. The moisture-retaining layer, located between the fabric layer and an insulation layer, releases steam during thermal activation. The insulation layer restricts heat loss and maintains targeted heat distribution. An electrotherapy mechanism embedded within the heating element delivers electrical stimulation to specific zones of the fabric layer. A control unit electrically communicates with the heating element and the electrotherapy mechanism to monitor and adjust operational parameters, enabling optimised therapeutic output. The apparatus integrates thermal energy transfer, moisture release, and electrical stimulation to provide enhanced therapy for targeted zones.

ANKLE-BASED WEARABLE DEVICE FOR STEP COUNT MEASUREMENT

APPLICATION NO.: 202411043427

INVENTORS:

DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES),
DR. AKANKSHA BAJPAI (PT) (SCHOOL OF HEALTH SCIENCES),
DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES),
DR. MAMTA TIWARI (SCHOOL OF ENGINEERING AND TECHNOLOGY)

ABSTRACT

Disclosed is an ankle-based wearable device (100) for step count measurement, comprising a wearable strap (102) configured to be worn around an ankle of a user; a housing (104) mounted to said wearable strap, wherein said housing comprises: an accelerometer (106) configured to detect accelerations along vertical, horizontal, and lateral axes, and is further configured to estimate a number of steps based on calculated stride length and frequency; a power source (108) electrically connected to said accelerometer, wherein said power source is configured to supply power to said accelerometer; a data transmission module (110) operatively connected to said accelerometer, wherein said data transmission module is configured to transmit step count data to an external device.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

BALANCE ASSESSMENT SYSTEM WITH INTEGRATED FEEDBACK MECHANISM

APPLICATION NO.: 202511018347

INVENTORS:

DR. DIGVIJAY SHARMA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY),
MS. APOORVA SRIVASTAVA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY),
DR. AAKANKSHA BAJPAI (PT)(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY),
DR. HINA VAISH (PT)(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY),
DR. ADARSH KUMAR SRIVASTAVA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY),
DR. UMESH KUMAR MAURYA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY),

ABSTRACT

The present disclosure discloses a balance assessment system comprising a foam board composed of pliable and soft material for placement of an individual's feet. A plurality of accelerometers is positioned at a base of the foam board to detect sway and deviations in posture of the individual. A plurality of gyroscopic sensors is operatively connected to the accelerometers to measure movements of the individual's feet on the foam board. A microcontroller is operatively connected to the accelerometers and gyroscopic sensors, processing data received from the accelerometers and gyroscopic sensors. A feedback mechanism includes a visual feedback unit with a screen mounted on the foam board to display balance maintenance duration and an auditory feedback unit with at least one speaker emitting auditory signals indicating detected deviations. A battery-powered unit supplies power, and a lateral switch enables activation and deactivation of the system.

HYDRAULIC PATIENT LIFTING SYSTEM FOR ICU BEDSIDE RADIOGRAPHY

APPLICATION NO.: 202411099282

INVENTORS:

MR. VAISH KHAN, BMRIT STUDENTS, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR
MR. DHEERAJ KUMAR, ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR
DR. DIGVIJAY SHARMA, ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR
MR. SANTOSH KUMAR YADAV, ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR
MR. PANKAJ KUMAR, RADIOGRAPHY TECHNICIAN, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR
DR. ADARSH KUMAR SRIVASTAV, ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR
DR. UMESH KUMAR MAURYA, ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR
DR. CHANDRA SHEKHAR KUMAR, ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR

ABSTRACT

The present disclosure discloses a hydraulic patient lifting system for ICU bedside radiography. Said system comprises a hydraulic pump arranged to provide pressurised hydraulic fluid for operation. A plurality of hydraulic actuators is positioned beneath a patient support platform, said actuators adapted to enable patient lifting and positioning in vertical and lateral directions. A control system is operatively coupled to the hydraulic pump and hydraulic actuators, comprising manual and automatic control arrangements. Said manual control allows user-initiated operation via a remote device, and said automatic control adjusts based on data from sensors detecting optimal patient positioning. The patient support platform is constructed from radiolucent material, compatible with radiographic imaging systems. A safety mechanism comprising automatic locking actuators prevents unintended movement, and a manual override permits operation during hydraulic or electrical failure.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

MEDICAL IMAGING TABLE WITH CONTROLLED ROTATIONAL MOVEMENT

APPLICATION NO.: 202511018292

INVENTORS:

MR. PANKAJ KUMAR(SCHOOL OF HEALTH SCIENCES), DR. DIGVIJAY SHARMA(SCHOOL OF HEALTH SCIENCES), DR. DHEERAJ KUMAR(SCHOOL OF HEALTH SCIENCES), MR. SANTOSH KUMAR YADAV(SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAVA(SCHOOL OF HEALTH SCIENCES), DR. UMESH KUMAR MAURYA(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

The present disclosure discloses a medical imaging table comprising a base frame supporting a rotational platform. The rotational platform is pivotally connected to the base frame through a central pivot assembly. A hydraulic actuation mechanism is operatively coupled to the rotational platform, wherein the hydraulic actuation mechanism regulates movement of the rotational platform around the central pivot assembly. A vibration-damping assembly is disposed at contact points between the base frame and the rotational platform. The hydraulic actuation mechanism enables smooth, stable, and controlled rotation of the rotational platform relative to the base frame to enable enhanced imaging positions.

METHOD FOR PREPARING FORTIFIED COOKIES COMPRISING LOTUS STEM POWDER

APPLICATION NO.: 202511018304

INVENTORS:

AAMENA ZAIDI(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

The present disclosure discloses a method to prepare fortified cookies comprising lotus stem powder. Refined wheat flour, butter, icing sugar, milk, and lotus stem powder are blended to form a homogeneous dough. Said dough is divided into loaves, flattened into a thick base, and cut into pieces using a cookie cutter. Said pieces are baked in a preheated oven at 180°C for 12 minutes. Said baked pieces are cooled for 1-2 minutes and stored in an airtight container.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ANKLE EXERCISE MACHINE WITH ADJUSTABLE FEATURES FOR TARGETED REHABILITATION

APPLICATION NO.: 202511018281

INVENTORS:

DR . NEHA SHUKLA(SCHOOL OF HEALTH SCIENCES), PRIYA RAJ(DEPARTMENT OF PHYSIOTHERAPY),

ABSTRACT

The present disclosure discloses a modified ankle exercise machine comprising a foot positioning assembly adjustable to target specific muscle groups in the calf, Achilles tendon, and foot. An ankle support structure provides cushioned support to maintain form and reduce strain. An adjustable resistance mechanism varies tension to facilitate muscle strengthening and rehabilitation. A range of motion control mechanism facilitates plantarflexion, dorsiflexion, inversion, and eversion movements. A sensor assembly integrated with the machine includes accelerometers, magnetometers, inertial movement units, electromyography sensors, and speedometers to monitor exercise parameters. A data processing unit receives sensor input, processes metrics, and adjusts resistance, motion control, and feedback interface for improved outcomes.

MODIFIED QUADRICEPS EXERCISE TABLE TO IMPROVE HANDGRIP STRENGTH AND STRENGTHEN INTRINSIC MUSCLES OF

APPLICATION NO.: 202411066370

INVENTORS:

DR UMESH KUMAR MAURYA (PT) (SCHOOL OF HEALTH SCIENCES), MISS MEGHA MEHROTRA (SCHOOL OF HEALTH SCIENCE), DR ADARSH KUMAR SRIVASTAV (PT) (SCHOOL OF HEALTH SCIENCE), DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES), MR. DHEERAJ KUMAR (SCHOOL OF HEALTH SCIENCE, CSJMU)

ABSTRACT

The present disclosure discloses a modified quadriceps exercise table, comprising a foampadded torque unit comprising a first lever arm configured for weight holding and a second lever arm configured for patient contact; an adjustable hand dynamometer operatively connected to said table, to measure and improve handgrip strength; a chrome-plated lever set comprising a fabric resistance band, said chrome-plated lever set strengthens intrinsic muscles of the foot; and a theraband attached to said hand dynamometer, wherein said theraband raises toes and fingers upon pressing said hand dynamometer.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

NECK BAND FOR MONITORING AND CORRECTING CERVICAL POSTURE

APPLICATION NO.: 202511018285

INVENTORS:

MS. APOORVA SRIVASTAVA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), DR. DIGVIJAY SHARMA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), DR. HINA VAISH (PT)(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), DR. AAKANKSHA BAJPAI (PT)(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), DR. ADARSH KUMAR SRIVASTAVA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), DR. UMESH KUMAR MAURYA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY),

ABSTRACT

The present disclosure discloses a neck band for cervical posture correction. A support structure composed of breathable material houses at least one accelerometer for detecting angular positions of a head relative to a cervical spine and at least one gyroscopic sensor for monitoring head movements. A microcontroller processes positional data from said accelerometer and said gyroscopic sensor to detect deviations beyond a predetermined threshold angle. A feedback mechanism provides visual and auditory feedback upon detecting such deviations. A power source operatively powers said microcontroller and said feedback mechanism. Said neck band enables continuous posture monitoring and offers real-time feedback to assist users in maintaining recommended cervical posture, with adjustment features and compatibility with mobile applications for data customization and monitoring.

MUSCO- ORTHO PAIN RELIEVING OIL

APPLICATION NO.: 202411099253

INVENTORS:

1. DR. ANAMIKA DIXIT, ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR
2. AAMENA ZAIDI, ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR
3. DR. NEHA SHUKLA, ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJM UNIVERSITY, KANPUR

ABSTRACT

The present disclosure discloses a pain-relieving oil composition comprising mustard oil as a base oil. Dried and ground eucalyptus leaves are added, containing flavonoids, followed by dried lavender leaves to provide anti-inflammatory properties. Dried and ground rosemary leaves are incorporated to contribute to cognitive improvement and pain alleviation. The composition also includes powdered turmeric containing curcumin to reduce inflammation, powdered ginger containing gingerol to alleviate swelling, and powdered clove with eugenol to provide anti-inflammatory action. The process includes boiling mustard oil, adding the herbal ingredients, cooling to lower temperatures, and adding peppermint oil for flavor and pain relief. The oil is filtered before packaging. Said composition is suitable for external application to alleviate joint pain, muscle pain, and menstrual cramps.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

PATIENT POSITIONING AND X-RAY ALIGNMENT APPARATUS

APPLICATION NO.: 202411071588

INVENTORS:

MISS. PRIYA MISHRA (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

The present disclosure discloses a patient positioning and X-ray alignment apparatus (100) comprising a rotating mattress platform (102), wherein the rotating mattress platform (102) rotates 360 degrees along a central axis and moves laterally to the left and right. A fixedposition X-ray bucky unit (104) intersects the rotating mattress platform (102), said X-ray bucky unit (104) includes an adjustable bucky slider (106) that moves longitudinally to align with the patient's position, wherein the fixed-position X-ray bucky unit (104) remains aligned with the rotating mattress platform (102) and the adjustable bucky slider (106) to facilitate imaging during patient rotation and lateral movement. An automatic locking device (108) is positioned longitudinally with the rotating mattress platform (102), wherein the automatic locking device is synchronized with the fixed-position X-ray bucky unit (104).

CONTRAST BATH SYSTEM FOR THERAPEUTIC TREATMENT OF MUSCULOSKELETAL CONDITIONS

APPLICATION NO.: 202411071581

INVENTORS:

DR. NEHA SHUKLA (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a contrast bath system comprising a portable water tank assembly having a first insulated tank for cold water and a second insulated tank for hot water. A flow regulator intersects said first insulated tank and said second insulated tank, controlling the flow of water between said tanks. An adjustable compression cuff is fluidly connected to said flow regulator and receives alternating cold and hot water from said water tank assembly. A micro-pump is operably connected to said adjustable compression cuff, controlling pressure and facilitating therapeutic treatment by coordinating water flow and compression.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HYDRODYNAMIC RESISTANCE APPARATUS FOR REHABILITATION TRAINING

APPLICATION NO.: 202511018297

INVENTORS:

DR. UMESH KUMAR MAURYA(SCHOOL OF HEALTH SCIENCES), MEGHA MEHROTRA(DEPARTMENT OF PHYSIOTHERAPY), DR. DIGVIJAY SHARMA(SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAVA(SCHOOL OF HEALTH SCIENCES), DR. DHEERAJ KUMAR(SCHOOL OF HEALTH SCIENCES), DR. HINA VAISH (PT)(SCHOOL OF HEALTH SCIENCES), DR. CHANDRA SHEKHAR KUMAR (PT)(SCHOOL OF HEALTH SCIENCES), DR. AAKANKSHA BAJPAI (PT)(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

The present disclosure provides a hydrodynamic resistance apparatus for rehabilitation training. The hydrodynamic resistance apparatus comprises a resistance barrier assembly arranged to form a fluid pathway and rotationally aligned with a directional control mechanism to channel fluid flow dynamically. A movement platform is positioned beneath the resistance barrier assembly and angularly aligned to enable guided user motion within the fluid pathway. A fluid propulsion mechanism is coupled with the movement platform and the directional control mechanism to generate adjustable currents, enabling targeted resistance in response to user motion within the fluid pathway. A pressure sensor unit is embedded in the movement platform to provide real-time data for regulating the fluid propulsion mechanism and optimising hydrodynamic resistance. An auxiliary proprioceptive module includes a BOSU Ball and a theraband, the theraband being tensioned in functional alignment with the fluid propulsion mechanism to facilitate dynamic balance training. The apparatus further comprises an alert mechanism with sensors and acoustic signalling to detect and notify improper user coordination, operatively integrated with the pressure sensor unit. An illumination system comprising coloured electric lights provides visual feedback and guides user coordination within the fluid pathway.

PREPARATION OF CHHANA SPREAD

APPLICATION NO.: 202411071581

INVENTORS:

DR ANAMIKA DIXIT (SCHOOL OF HEALTH SCIENCE), AAMENA ZAIDI (SCHOOL OF HEALTH SCIENCE), DR NEHA SHUKLA (PT) (SCHOOL OF HEALTH SCIENCE, CSJMU)

ABSTRACT

The present disclosure provides a method for preparing a chhana spread comprising warming whole cow milk and whole soymilk separately to approximately 40 degrees Celsius; filtering and clarifying said warmed whole cow milk and said warmed whole soymilk; standardizing said filtered and clarified whole cow milk to approximately 3.5% fat content; mixing said standardized whole cow milk and said filtered and clarified whole soymilk in predetermined ratios selected from the group consisting of 80:20, 60:40, 40:60, and 20:80 cow milk to soymilk; subjecting said mixture to heat treatment at approximately 90 degrees Celsius for approximately 15 minutes; cooling said heat-treated mixture to a temperature range of approximately 65 to 80 degrees Celsius; adding coagulants comprising citric acid and calcium lactate to said cooled mixture to induce coagulation; draining whey from said coagulated mixture using a hanging technique to obtain chhana; slicing said chhana; blending said sliced chhana with approximately 10% whey, salt, and preservatives to form said chhana spread; packaging said chhana spread; and storing said packaged chhana spread at approximately 5 degrees Celsius.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HOMEMADE BABY FOOD

APPLICATION NO.: 202411099258

INVENTORS:

AAMENA ZAIDI (ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJMU, KANPUR)
NEHA SHUKLA (ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJMU, KANPUR)
DR.APARNA SHUKLA (ASSISTANT PROFESSOR, DAYANAND GIRL'S PG COLLEGE, KANPUR)
DR. ANAMIKA DIXIT (ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJMU, KANPUR)
DR. PRAVEEN KATIYAR (ASSISTANT PROFESSOR, SCHOOL OF HEALTH SCIENCES, CSJMU, KANPUR)

ABSTRACT

The present disclosure provides a method for preparing homemade baby food. Said method comprises the steps of rinsing rice, moong dal, broken wheat, almonds, and fox nuts with water; draining the water from the rinsed ingredients and allowing them to dry for 30 minutes; roasting moong dal, broken wheat, almonds, and fox nuts separately until fully dry; roasting rice on low flame until fully dry; blending the roasted rice, moong dal, broken wheat, almonds, and fox nuts into a fine powder; sieving the fine powder using a fine mesh to remove grains; mixing the fine powder with milk powder and jaggery powder; sieving again to obtain the final baby food product; and storing the baby food in an airtight container for up to a month.

BALANCED NUTRITIONAL FOOD COMPOSITION FOR SPECIFIC DIETARY NEEDS

APPLICATION NO.: 202411071581

INVENTORS:

AAMENA ZAIDI (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a nutritional food composition, comprising Bajra flour in an amount ranging from 45 to 55 grams, Semolina in an amount ranging from 20 to 30 grams, Ragi flour in an amount ranging from 20 to 30 grams, Roasted ground nuts in an amount ranging from 25 to 35 grams, Desiccated coconut in an amount ranging from 25 to 35 grams, Jaggery in an amount ranging from 95 to 105 grams, Ghee in an amount ranging from 20 to 30 grams, and Cardamom powder in an amount of a pinch. Said composition is configured in a spherical form suitable for consumption and is characterized by enhanced shelf life. Said composition provides nutrients, including iron, calcium, omega-3 fatty acids, antioxidants, and fiber, and is designed to cater to children, teenage girls, expectant mothers, and nursing mothers.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

NUTRITIOUS FOOD COMPOSITION FOR BALANCED NUTRITIONAL INTAKE ACROSS AGE GROUPS

APPLICATION NO.: 202411099267

INVENTORS:

1. DR. APARNA SHUKLA, ASSISTANT PROFESSOR (DEPARTMENT OF HOME SCIENCE, DAYANAND GIRLS PG COLLEGE, KANPUR)
2. AAMENA ZAIDI, ASSISTANT PROFESSOR (DEPARTMENT OF HUMAN NUTRITION SCHOOL OF HEALTH SCIENCES, CSJMU, KANPUR)

ABSTRACT

The present disclosure provides a nutritious food composition for consumption by individuals in various age groups. The composition comprises white pepper, wheat flour, almonds, desi ghee, sonth (dry ginger powder), and misri (powdered sugar). Said composition is processed by combining the ingredients, roasting specific components, adding the remaining ingredients, and forming a spherical shape. The food composition delivers a balanced nutritional profile suitable for children, teenage girls, expectant mothers, nursing mothers, and elderly individuals. The method of preparation includes grinding white pepper separately, grinding almonds and sonth together, roasting the mixture of white pepper and wheat flour in desi ghee, adding powdered misri, cooling the mixture, and shaping it into spherical forms. Said composition provides various health benefits, including sugar control and relief from headaches and weakness.

REHABILITATION FEEDBACK SYSTEM FOR SHOULDER JOINT MOVEMENT ANALYSIS

APPLICATION NO.: 202511018294

INVENTORS:

DEEPANNITA AWASTHI(SCHOOL OF HEALTH SCIENCES), DR. DIGVIJAY SHARMA(DIRECTOR, SCHOOL OF HEALTH SCIENCES), DR. UMESH KUMAR MAURYA(SCHOOL OF HEALTH SCIENCES), SUNNY GAUTAM(SCHOOL OF HEALTH SCIENCES), DR. CHANDRA SHEKHAR KUMAR (PT)(SCHOOL OF HEALTH SCIENCES), DR. NEHA SHUKLA(SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAVA(SCHOOL OF HEALTH SCIENCES), DR. HINA VAISH (PT)(SCHOOL OF HEALTH SCIENCES), DR. AAKANKSHA BAJPAI (PT)(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

The present disclosure provides a rehabilitation feedback system comprising a vertical ladder structure including sequentially arranged rungs positioned along a longitudinal axis, a sensor assembly attached proximally to a patient's shoulder capturing real-time shoulder joint movement data while engaging with the vertical ladder structure, a processing unit operatively coupled with the sensor assembly analyzing movement patterns and generating corrective guidance based on data from the sensor assembly, and a display unit interconnected with the processing unit for presenting the corrective guidance derived from real-time analysis to enhance shoulder rehabilitation outcomes.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

WOMEN DEFENDER BAND

APPLICATION NO.: 202411071553

INVENTORS:

AYESHA (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a safety system for real-time location tracking and alert activation, comprising a wearable band comprising a button, a GPS receiver, and a microcontroller. A power supply is integrated within said wearable band. A cellular communication system is operatively connected to said microcontroller and transmits location data to an external server. A server is configured to receive location data from said wearable band. A communication network is operatively coupled to said server and relays location information to external entities. Upon activation of said button, said microcontroller retrieves location data from said GPS receiver, and said cellular communication system transmits said location data to said server for distribution to one or more external entities.

ADJUSTABLE WEDGE DEVICE FOR LOWER LIMB ELEVATION

APPLICATION NO.: 202411051914

INVENTORS:

DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES), DR. AKANKSHA BAJPAI (PT) (SCHOOL OF HEALTH SCIENCES), DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAVA (PT) (SCHOOL OF HEALTH SCIENCES), DR. UMESH KUMAR MAURYA (PT) (SCHOOL OF HEALTH SCIENCES)

ABSTRACT

The present disclosure provides a system for adjustable lower limb elevation. The system comprises a base configured to rest securely on a stable surface, said base comprising a non-slip material to prevent slipping during use, an adjustable component coupled to said base, said adjustable component comprising durable materials and being configured to be set at various angles of 15°, 30°, and 45°, a hinge and locking mechanism configured to secure said adjustable component at a desired angle, a removable cover configured to provide comfort and hygiene, said cover being washable, and a Velcro strap configured to provide stability by keeping the lower limb supported and static when movement is contraindicated.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR AIDING IN YOGA EXERCISES

APPLICATION NO.: 202411066368

INVENTORS:

DR RAM KISHORE (SCHOOL OF HEALTH SCIENCE), ANIL KUMAR YADAV (SCHOOL OF HEALTH SCIENCE), DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES), NEELU GOYAL (SCHOOL OF HEALTH SCIENCE), DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a system for aiding in yoga exercises, comprising a stable chair configured with four legs, a padded seat base affixed to said stable chair, a pair of mobile arm rests attached to said stable chair, wherein said mobile arm rests configured to move in and out over said padded seat base to provide stability during spinal twist movements, a pair of upper poles extending vertically from said stable chair, and a middle mobile back support positioned between said pair of upper poles, said middle mobile back support configured to facilitate backward bending at individual areas of the spine.

SYSTEM FOR ASSESSING CHEST EXPANSION AND RESPIRATORY RATE

APPLICATION NO.: 202411043421

INVENTORS:

DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES), DR. AKANKSHA BAJPAI (PT) (SCHOOL OF HEALTH SCIENCES), SUNNY GAUTAM (SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAVA (PT) (SCHOOL OF HEALTH SCIENCES), DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES)

ABSTRACT

The present disclosure provides a system for assessing chest expansion and respiratory rate, comprising: a first wearable belt configured to be worn around an upper chest region of a subject, incorporating a first set of sensors comprising a first textile electrodes for detecting upper thoracic expansion and contraction, and a first bio- impedance sensor for measuring changes in electrical impedance; a second wearable belt for the lower chest region, incorporating a second set of sensors with a second textile electrodes for detecting lower thoracic expansion and contraction, and a second bio-impedance sensor; a processing unit operatively connected to both sets of sensors, configured to receive signals, filter and separate respiratory from cardiac signals, and analyze the respiratory signals to determine respiratory rate and patterns; a feedback mechanism providing real-time feedback based on assessed respiratory patterns; and a wireless communication module for transmitting data to an external device.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR ASSESSING RANGE OF MOTION OF A JOINT

APPLICATION NO.: 202511018291

INVENTORS:

DR. DIGVIJAY SHARMA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), MS. APOORVA SRIVASTAVA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), DR. HINA VAISH (PT)(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), DR. AAKANKSHA BAJPAI (PT)(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), DR. ADARSH KUMAR SRIVASTAVA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY), DR. UMESH KUMAR MAURYA(CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY),

ABSTRACT

The present disclosure provides a system for assessing the range of motion of a joint. The system comprises a goniometer body formed by a movable arm and an immovable arm, each arm extending from a central fulcrum. An accelerometer positioned at the base of the movable arm detects movement relative to the immovable arm. A microcontroller operatively coupled to the accelerometer processes data received from the accelerometer to calculate a degree or angle of motion. A display unit positioned superiorly at the central fulcrum provides visual feedback representing the calculated degree or angle of motion. A feedback mechanism integrated with the display unit visually represents the range of motion in degrees.

SYSTEM FOR FLUID COLLECTION AND CONTAINMENT

APPLICATION NO.: 202511018308

INVENTORS:

MR. VAISH KHAN(SCHOOL OF HEALTH SCIENCES), DR. DHEERAJ KUMAR(SCHOOL OF HEALTH SCIENCES), DR. DIGVIJAY SHARMA(SCHOOL OF HEALTH SCIENCES), MR. SANTOSH KUMAR YADAV(SCHOOL OF HEALTH SCIENCES), MR. PANKAJ KUMAR(SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAVA(SCHOOL OF HEALTH SCIENCES), DR. UMESH KUMAR MAURYA(SCHOOL OF HEALTH SCIENCES), DR. CHANDRA SHEKHAR KUMAR (PT)(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

The present disclosure provides a system for fluid collection and containment. The system comprises a flexible containment structure defining an enclosed cavity for receiving fluid, the containment structure including a layered assembly having an outer surface and an inner surface. The inner surface operably directs fluid flow toward a central region. An absorbent core is positioned within the central region, the absorbent core comprising a fluid-reactive composition that transitions from a liquid-permeable state to a gel-forming state upon fluid contact, encapsulating the fluid within the absorbent core. A unidirectional inlet valve is disposed on the containment structure to regulate fluid flow exclusively into the enclosed cavity. An integrated closure mechanism coupled to the containment structure isolates the enclosed cavity, enabling fluid retention, odour reduction, and secure disposal.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR MEASURING MUSCLE FORCE AND STRENGTH OF LOWER EXTREMITIES

APPLICATION NO.: 202511018310

INVENTORS:

DR. UMESH KUMAR MAURYA(SCHOOL OF HEALTH SCIENCES),
KOMAL KUMARI(DEPARTMENT OF PHYSIOTHERAPY),
RICHA KUMARI(DEPARTMENT OF PHYSIOTHERAPY),
DR. DIGVIJAY SHARMA(SCHOOL OF HEALTH SCIENCES),
DR. ADARSH KUMAR SRIVASTAVA(SCHOOL OF HEALTH SCIENCES),
DR. DHEERAJ KUMAR(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

The present disclosure provides a system for measuring muscle force and muscle strength of lower extremities. The system comprises a foot platform incorporating multiple pressure-sensitive regions positioned for interaction with a user's heel, arch, and toes. The foot platform is structurally aligned with a force sensor array. A signal processing unit integrated with the force sensor array converts analog outputs from the force sensor array into digital data suitable for real-time analysis. A digital display operatively connected to the signal processing unit provides immediate visualization of muscle-generated force metrics during application to the foot platform, enabling assessment of muscle performance.

TREADMILL WALKING SUPPORT FOR PEDIATRIC POPULATION

APPLICATION NO.: 202411071587

INVENTORS:

POOJA (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a system for pediatric treadmill support 100 comprising a main static frame 102 attachable to a base frame of a treadmill through base support attachments 104, adjustable handlebar 106 configured to rest in adjustable sockets 108 on said main static frame 102, wherein said adjustable sockets 108 are aligned longitudinally with said main static frame 102, such alignment enabling said adjustable handlebar 106 to slide within said adjustable sockets 108 for height variation, allowing customization of said handlebar 106's position relative, upright posts 110 positioned to intersect said main static frame 102 and said base support attachments 104, and pulse grips 112 integrated into said handlebar 106, enabling enhanced stability and feedback during gait training.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM AND METHOD FOR PRE-ASSESSMENT OF RADIOGRAPHY SCANS

APPLICATION NO.: 202411043417

INVENTORS:

DHEERAJ KUMAR (SCHOOL OF HEALTH SCIENCES),
SUNNY GAUTAM (SCHOOL OF HEALTH SCIENCES),
DR. ADARSH KUMAR SRIVASTAVA (PT) (SCHOOL OF HEALTH SCIENCES)

ABSTRACT

The present disclosure provides a system for pre-assessment of radiography scans. The system comprises a plurality of modality-specific modules, each configured to analyze a respective type of radiography scan selected from X-ray, CT scan, MRI, and ultrasound; a clinical approach integration module, configured to adapt clinical protocols and guidelines for each modality-specific module; a symptom recognition module, configured to identify common patterns and indicators for abnormalities based on clinical data; an age factor analysis module, configured to adjust diagnostic parameters based on the age of the patient; a machine learning algorithm module, configured to train on modality-specific datasets and continuously learn from new data to improve diagnostic performance; an image processing module, configured to perform image analysis and enhancement specific to each modality; a diagnostic output module, configured to provide comprehensive analysis and diagnostic results based on the integrated data from the modality-specific modules, clinical approach integration module, symptom recognition module, and age factor analysis module.

ADVANCED MRI ARTIFACTS REDUCTION SYSTEM

APPLICATION NO.: 202411072385

INVENTORS:

MR. DHEERAJ KUMAR (SCHOOL OF HEALTH SCIENCES), MR. SANTOSH KUMAR YADAV (SCHOOL OF HEALTH SCIENCES), PANKAJ KUMAR (SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAV (SCHOOL OF HEALTH SCIENCES), DR. UMESH KUMAR MAURYA (SCHOOL OF HEALTH SCIENCES), DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES), DR. CHANDRA SHEKHAR KUMAR (SCHOOL OF HEALTH SCIENCES), DR. SHASHI KANT TRIPATHI (ATAL BIHARI VAJPAYEE SCHOOL OF LEGAL STUDIES),

ABSTRACT

The present disclosure provides a system for reducing artifacts in Magnetic Resonance Imaging (MRI) images. The system comprises an artifact detection unit that detects artifacts in MRI image data during an MRI scanning process. A correction unit operatively connected to said artifact detection unit applies real-time adjustments to said MRI image data based on said detected artifacts. An adaptive hardware unit interfaces with an MRI machine, wherein said adaptive hardware unit dynamically adjusts operational parameters of said MRI machine in response to real-time adjustments from said correction unit. A feedback unit operatively connected to said correction unit and said adaptive hardware unit continuously monitors MRI image quality and provides real-time feedback, thereby enabling real-time artifact correction during said MRI scanning process.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

WEIGHT CUFF FOR PEDIATRIC USE

APPLICATION NO.: 202411066359

INVENTORS:

DR AAKANKSHA BAJPAI (PT) (SCHOOL OF HEALTH SCIENCE), DR APOORVA SRIVASTAVA (PT) (SCHOOL OF HEALTH SCIENCE), DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES), DR CHANDRASHEKHAR KUMAR (PT) (SCHOOL OF HEALTH SCIENCE), DR NEHA SHUKLA (PT) (SCHOOL OF HEALTH SCIENCE), DR ADARSH KUMAR SRIVASTAV (PT) (SCHOOL OF HEALTH SCIENCE), DR UMESH KUMAR MAURYA (PT) (SCHOOL OF HEALTH SCIENCE), DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a weight cuff for pediatric use, comprising a body formed from a soft hypoallergenic material; an adjustable strap configured to secure said weight cuff to a limb of a pediatric user; an exterior surface of said body, wherein said exterior surface is decorated with child-friendly designs; a plurality of compartments within said body, each compartment configured to receive a weight insert; one or more weight inserts disposed within at least one of said compartments; and a sound-emitting element attached to said weight cuff, wherein said sound-emitting element is configured to produce sounds upon movement of said weight cuff.

ACUPRESSURE SURFACE APPARATUS FOR ENHANCING MOTOR FUNCTION RECOVERY AND SENSORY FEEDBACK

APPLICATION NO.: 202511018296

INVENTORS:

DR. UMESH KUMAR MAURYA(SCHOOL OF HEALTH SCIENCES), SRISHTI DWIVEDI(DEPARTMENT OF PHYSIOTHERAPY), DR. DIGVIJAY SHARMA(SCHOOL OF HEALTH SCIENCES), DR. ADARSH KUMAR SRIVASTAVA(SCHOOL OF HEALTH SCIENCES), DR. HINA VAISH (PT)(SCHOOL OF HEALTH SCIENCES), DR. CHANDRA SHEKHAR KUMAR (PT)(SCHOOL OF HEALTH SCIENCES), DR. DHEERAJ KUMAR(SCHOOL OF HEALTH SCIENCES), DR. AAKANKSHA BAJPAI (PT)(SCHOOL OF HEALTH SCIENCES),

ABSTRACT

The present disclosure provides an acupressure surface apparatus comprising a modular pressure mat assembly with removable acupressure mats incorporating multiple pressure pads. Each pressure pad includes spring-loaded plungers adapted to adjust force levels and stimulate specific pressure points for enhancing motor function recovery and sensory feedback. A feedback detection mechanism embedded within each removable acupressure mat monitors applied force, transmits adjustment signals based on monitored data, and facilitates customizable therapeutic benefits by enabling variations in pressure intensity. A pressure redistribution assembly interconnected with the modular pressure mat assembly via calibrated linkages redistributes excess force from over-applied areas to under-applied areas, ensuring uniform pressure distribution. A tension adjustment unit dynamically balances the force across the modular pressure mat assembly and accommodates raised nodes or protrusions on the removable mats to promote circulation, pain relief, and muscular relaxation.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

APPARATUS FOR SELF-STRETCHING AND STRENGTHENING CALF MUSCLES

APPLICATION NO.: 202411066365

INVENTORS:

DR UMESH KUMAR MAURYA (PT) (SCHOOL OF HEALTH SCIENCES), DR ADARSH KUMAR SRIVASTAV (PT) (SCHOOL OF HEALTH SCIENCE), DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES), DR. HINA VAISH (PT) (SCHOOL OF HEALTH SCIENCES), DR CHANDRASHEKHAR KUMAR (PT) (SCHOOL OF HEALTH SCIENCE), MR. DHEERAJ KUMAR (SCHOOL OF HEALTH SCIENCES), DR AAKANKSHA BAJPAI (PT) (SCHOOL OF HEALTH SCIENCE, CSJMU)

ABSTRACT

The present disclosure provides an apparatus for self-stretching and strengthening calf muscles, comprising a base platform configured to provide stability, said base platform having a non-slip material to maintain said apparatus in position during use; a rotational footplate operatively connected to said base platform, wherein said rotational footplate is configured to rotate up to 45 degrees and includes markers for an angle adjustment; a plurality of adjustable resistance bands, each of said adjustable resistance bands being configured to attach to said footplate and said base platform, wherein said adjustable resistance bands provide varying levels of resistance and adjustable length to customize workout intensity; an ankle holding pouch configured to provide stability to the user's ankle during exercises; and an inbuilt goniometer integrated into said footplate, wherein said inbuilt goniometer is configured to determine the range of motion during exercises.

PATIENT TRANSFER TECHNIQUES WITH INTEGRATED VITAL SIGN MONITORING SYSTEM

APPLICATION NO.: 202411066360

INVENTORS:

MR. DHEERAJ KUMAR (SCHOOL OF HEALTH SCIENCES),
DR ADARSH KUMAR SRIVASTAV (PT) (SCHOOL OF HEALTH SCIENCE),
DR UMESH KUMAR MAURYA (PT) (SCHOOL OF HEALTH SCIENCES),
DR. DIGVIJAY SHARMA (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

The present invention discloses a system for integrated patient transfer and vital sign monitoring. The system comprises a patient transfer device, which is either a wheelchair or a stretcher, equipped with sensors for continuous monitoring of vital signs including heart rate, blood pressure, oxygen saturation, and body temperature. A vital sign monitoring unit collects data through sensors and a data processing unit analyzes the data in real-time. The system includes a communication module to transmit vital sign data to a central monitoring system or a handheld device used by healthcare providers. Additionally, the system features a user interface with a display screen on the patient transfer device to show real-time vital sign data and alerts for abnormal readings.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR FABRICATING NANOFIBER SCAFFOLD FOR WOUND HEALING

APPLICATION NO.: 202411071927

INVENTORS:

DR.SHASHIKIRAN MISRA (SCHOOL OF PHARMACEUTICAL SCIENCES),
PALLAVI TIWARI (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR.AJAY KUMAR (SCHOOL OF PHARMACEUTICAL SCIENCES),

ABSTRACT

Disclosed is a method for fabricating a nanofiber scaffold for wound healing, comprising preparing a solution of polycaprolactone (PCL) by dissolving said PCL in acetone and stirring said solution at approximately 450 revolutions per minute (rpm) for approximately 4 hours at a temperature of approximately 50 degrees Celsius; preparing a solution of polyvinyl alcohol (PVA) by dissolving said PVA in distilled water and stirring said solution at approximately 350 revolutions per minute (rpm) for approximately 3 hours at a temperature of approximately 50 degrees Celsius; incorporating an antibiotic drug into said PVA solution; transferring said PVA and PCL solutions into a syringe fitted with a blunt-end needle; and ejecting said solutions at a flow rate of approximately 1.5 mL/hr onto a grounded aluminum collector positioned approximately 13 cm from said needle under a voltage of approximately 13 kV to form a nanofiber scaffold.

METHOD FOR PREPARING A POLYHERBAL SYRUP FORMULATION FOR MANAGING KIDNEY STONES

APPLICATION NO.: 202411066322

INVENTORS:

PRAKASH CHANDRA GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES),
NISHA SHARMA (SCHOOL OF PHARMACEUTICAL SCIENCES),
JAY KUMAR (SCHOOL OF PHARMACEUTICAL SCIENCES, CSJMU)

ABSTRACT

Disclosed is a method for preparing a polyherbal syrup formulation for managing kidney stones, comprising coarsely powdering 250 grams of aerial parts of Blumea lanceolaria and 250 grams of aerial parts of Phlogacanthus thyrsiflorus; extracting said powdered aerial parts by decoction method with distilled water at a plant-to-water ratio of 1:10 (w/v); filtering said mixture to obtain a filtrate; combining one portion of said filtrate with five portions of a simple syrup, wherein said simple syrup is prepared by dissolving 666.7 grams of sucrose in purified water and adding sufficient boiling water to produce 1000 milliliters; adding 0.2 percent sodium benzoate as a preservative to the combined mixture; testing the solubility of said mixture by visually examining the clearness of the solution; and subjecting said final herbal syrup to evaluation for production quality as per official standards.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HERBAL OINTMENT FORMULATION FOR THE WOUND HEALING ACTIVITY OF MICHELICA CHAMPACA

APPLICATION NO.: 202411066347

INVENTORS:

NIKHIL KUMAR (SCHOOL OF PHARMACEUTICAL SCIENCES), DR JYOTI NANDA SHARMA (SCHOOL OF PHARMACEUTICAL SCIENCES, CSJMU)

ABSTRACT

The present disclosure discloses a herbal ointment composition for wound healing, comprising 50 g of wool fat, 50 g of hard paraffin, 50 g of cetostearyl alcohol, 850 g of white soft paraffin, 20 g of Michelica champaca extract, wherein said extract is selected from the group consisting of aqueous extract and ethanolic extract.

FORMULATION AND EVALUATION OF TOPICAL GEL LOADED WITH CURCUMIN MICROSPONGES

APPLICATION NO.: 202411071594

INVENTORS:

PRAKASH CHANDRA GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES),
NISHA SHARMA (SDR. ANJU SINGH (SCHOOL OF PHARMACEUTICAL SCIENCES), KUMARI PREETI (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. AJAY KUMAR GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES), NOOPUR VERMA (SCHOOL OF PHARMACEUTICAL SCIENCES, CSJMU)CHOOL OF PHARMACEUTICAL SCIENCES), JAY KUMAR (SCHOOL OF PHARMACEUTICAL SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a composition for a curcumin microsponges loaded topical gel formulation, said composition comprising curcumin in an amount ranging from 90 mg to 110 mg; a polymer selected from Eudragit-S (ES)-100 in an amount ranging from 800 mg to 1200 mg, or Eudragit-L (EL)-100 in an amount ranging from 800 mg to 1200 mg; methanol in an amount ranging from 4 ml to 6 ml; ethanol in an amount ranging from 4 ml to 6 ml; polyvinyl alcohol (PVA) in an amount ranging from 45 mg to 55 mg; and water in sufficient amount.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HERBAL-BASED SUNSCREEN FORMULATION AND A METHOD OF PREPARATION THEREOF

APPLICATION NO.: 202411071590

INVENTORS:

KAMYA OMER (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR. ANJU SINGH (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR. AJAY KUMAR GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR. PRAVEEN KATIYAR (SCHOOL OF HEALTH SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a herbal-based sunscreen formulation comprising an aqueous extract of Clitoria ternatea at a concentration ranging from 2% to 6%; Carbopol 940 at a concentration ranging from 0.4% to 0.6% w/v; triethanolamine at a concentration ranging from 0.8% to 1.2% v/v; propylene glycol at a concentration ranging from 14% to 16% v/v; methyl paraben at a concentration ranging from 0.16% to 0.20% w/v; propyl paraben at a concentration ranging from 0.01% to 0.03% w/v; and distilled water, such that the total volume of the formulation is 100 ml.

DEVELOPMENT AND OPTIMIZATION OF DEXTROSE COATED REBAMIPIDE LIPOSOMES FOR LIVER CIRRHOSIS

APPLICATION NO.: 202411066340

INVENTORS:

SHIVAM VERMA (SCHOOL OF PHARMACEUTICAL SCIENCES),
PRAKASH CHANDRA GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES),
JAY KUMAR (SCHOOL OF PHARMACEUTICAL SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a method for developing and optimizing dextrose-coated rebamipide liposomes for liver cirrhosis treatment, comprising: preparing a saturated solution of surfactants in different solvents and adding an equal quantity of rebamipide, followed by stirring to form a homogeneous solution; filtering said saturated solution and diluting the filtrate for absorbance measurement; preparing an aqueous phase and a lipid phase, followed by homogenization to form a water-in-oil emulsion; adding said water-in-oil emulsion dropwise to an aqueous solution to form a water-in-oil-in-water emulsion, followed by further homogenization; removing chloroform and diethyl ether using a rotary evaporator and stirring the resulting dispersion to obtain rebamipide-loaded liposomes (R-Liposomes); optimizing said R-Liposomes using Box-Behnken design to determine the optimal concentrations of components; coating the optimized batch of R-Liposomes with a dextrose solution to obtain dextrose-coated rebamipide liposomes (DCR-Liposomes); characterizing said R-Liposomes and DCR-Liposomes for particle size, polydispersity index, zeta potential, entrapment efficiency, drug loading, and in vitro drug release.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ISOLATION OF NATURAL POLYMER FROM THE PULP OF TINOSPORA CARDIFOLIA FRUIT

APPLICATION NO.: 202411071593

INVENTORS:

NOOPUR VERMA (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. AJAY KUMAR GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a method for isolating a natural polymer from the pulp of Tinospora cardifolia fruit, comprising immersing said fruit pulp in a 1M NaOH solution, maintaining said immersion at a temperature range of 45° - 55°C for 5-7 hours, separating the filtrate from the residue by filtration, and precipitating said polymer from said filtrate using acetone.

METHOD FOR PREPARING A POLYHERBAL GEL FORMULATION WITH ANTIMICROBIAL PROPERTIES

APPLICATION NO.: 202411071926

INVENTORS:

VANDITA VISHWAKARMA (SCHOOL OF PHARMACEUTICAL SCIENCES), MANISHA TRIVEDI (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. ANUPRIYA KAPOOR (SCHOOL OF PHARMACEUTICAL SCIENCES),

ABSTRACT

The present disclosure provides a method for preparing a polyherbal gel formulation with antimicrobial properties, comprising obtaining an extract of Cynodon dactylon from a dried plant sample, fractionating said extract using a solvent extraction process with at least one solvent selected from the group consisting of methanol, chloroform, n-hexane, butanol, and aqueous solvent, incorporating said extract into a gel base, said gel base comprising a combination of hydroxypropyl methylcellulose (HPMC) and sodium carboxymethyl cellulose (SCMC) in varying concentrations, preparing said polyherbal gel by mixing said fractionated extract with said gel base under controlled conditions, assessing antimicrobial activity of said polyherbal gel against Staphylococcus aureus, Escherichia coli, Klebsiella pneumoniae, and Candida albicans by utilizing the agar well diffusion method, and determining the zone of inhibition for said polyherbal gel against said bacterial and fungal strains as an indicator of antimicrobial efficacy.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR PREPARING A SALICYLIC ACID-LOADED GEL FOR ACNE TREATMENT

APPLICATION NO.: 202411099249

INVENTORS:

PALLAVI TIWARI*, DR.SHASHI KIRAN MISRA ,DR.AJAY KUMAR**, DR.ANUPRIYA KAPOOR*

* ASSISTANT PROFESSOR ,SCHOOL OF PHARMACEUTICAL SCIENCES,CSJMU,**ASSOCIATE PROFESSOR,

ABSTRACT

The present disclosure provides a method for preparing a salicylic acid-loaded gel for acne treatment, comprising the steps of dissolving salicylic acid in a co-solvent comprising a mixture of water and propylene glycol; transferring the resulting solution into a container with carbopol-934 in a range of 1.0 to 2.0 grams per 100 milliliters to form a dispersion; resting said dispersion for a predetermined time period ranging from 25 to 35 minutes to allow swelling; stirring said dispersion at a controlled speed to form a homogenous gel; incorporating a preservative mixture comprising methyl paraben in a range of 0.04 to 0.08 grams and propyl paraben in a range of 0.02 to 0.04 grams into said gel; adding mint oil as a perfuming agent in a range of 0.3 to 0.7 milliliters to said gel at a final stage; and evaluating said gel for physicochemical properties, including pH, viscosity, spreadability, and homogeneity.

METHOD FOR PREPARING A TRANSDERMAL PATCH CONTAINING ATORVASTATIN CALCIUM FOR TREATING HYPERLIPIDEMIA

APPLICATION NO.: 202411099252

INVENTORS:

PALLAVI TIWARI
SCHOOL OF PHARMACEUTICAL SCIENCES ,CSJMU,KANPUR

ABSTRACT

The present disclosure provides a method for preparing a transdermal patch containing atorvastatin calcium for treating hyperlipidemia. The method comprises dissolving ethyl cellulose and hydroxypropyl methylcellulose in a solvent mixture comprising dichloromethane and methanol to form a polymeric solution. Atorvastatin calcium is added to said polymeric solution while stirring to create a uniform drug-polymer mixture. Polyethylene glycol 400 is incorporated as a plasticizer and Tween 80 as a penetration enhancer into such drug-polymer mixture. The drug-polymer mixture is poured onto a surface and allowed to dry to form a transdermal patch. Said transdermal patch is cut into predetermined sizes and stored in a desiccator for preservation.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

FORMULATION AND CHARACTERIZATION OF TOPICAL GEL CONTAINING DAUCUS CAROTA SEED OIL NIOSOMES

APPLICATION NO.: 202411071595

INVENTORS:

KUMARI PREETI (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. ANJU SINGH (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. AJAY KUMAR GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES), KAMYA OMER (SCHOOL OF PHARMACEUTICAL SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a niosomal composition for topical application, comprising: cholesterol at a concentration ranging from 20 mg to 60 mg; buffer solution of 100 ml; Span 60 at a concentration ranging from 45 mg to 100 mg; Tween 80 at a concentration ranging from 45 mg to 100 mg; diethyl ether at a concentration of 5 - 7 ml; and Daucus carota seed oil at a concentration of 0.1 to 0.3 ml and prepared by using Ether ejection method. Topical gel is prepared by diffusion method using carbapol 940, distilled water, triethanolamine.

TRADITIONAL INDIAN HERBAL COMPOSITION FOR TREATING PERIODONTITIS, GEL PREPARATION METHOD THEREOF

APPLICATION NO.: 202411066798

INVENTORS:

DR NISHA SHARMA (SCHOOL OF PHARMACEUTICAL SCIENCES), MR. RAGHVENDRA KUMAR YADAV (SCHOOL OF PHARMACEUTICAL SCIENCES), MR. APOORV MISHRA (SCHOOL OF PHARMACEUTICAL SCIENCES), MS. PRIYANKA MISHRA (SCHOOL OF PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a composition for an oral gel for treating periodontitis, comprising herbal extracts of Maulsiri and Babool in a combined concentration of 1-2% by weight; carbopol 934 as a gelling agent in a concentration of 1-1.5% by weight; propylene glycol as a humectant in a concentration of 1.5% by weight; triethanolamine as a pH adjuster in a concentration of 0.3% by weight; methyl paraben as a preservative in a concentration of 0.5% by weight; propyl paraben as a preservative in a concentration of 0.2% by weight; and water as a solvent in an amount sufficient to achieve a gel consistency.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ANTI ACNE MICROSPONGE (MS) BASED TOPICAL GEL OF QUERCETIN

APPLICATION NO.: 202411051912

INVENTORS:

APOORV MISHRA (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. NISHA SHARMA (SCHOOL OF PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a method for the treatment of acne, comprising a formulation of microsponges, wherein said microsponges are loaded with quercetin; a topical gel medium incorporating said quercetin-loaded microsponges; wherein said microsponges are synthesized by dissolving ethyl cellulose as a polymer and polyvinyl alcohol as a surfactant in a quasi-emulsion solvent evaporation method, forming microsponges; wherein said topical gel medium is prepared by incorporating said quercetin-loaded microsponges into a gel base containing carbopol-934 as a gelling agent; wherein said method provides enhanced permeation across the skin barrier, exhibits controlled drug release, and demonstrates antimicrobial efficacy against Staphylococcus aureus and Candida albicans strains.

NORFLOXACIN NANOPARTICLES LADEN IN-SITU GEL

APPLICATION NO.: 202411051907

INVENTORS:

HIMANSHU GAUTAM (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. KALPANA (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. PRATIMA KATIYAR (SCHOOL OF PHARMACEUTICAL SCIENCES), VIPIN MAURY (SCHOOL OF PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a method for the treatment of eye infections, comprising a formulation of polymeric nanoparticles, wherein said nanoparticles are loaded with norfloxacin; an in-situ gel medium incorporating said norfloxacin-loaded polymeric nanoparticles; wherein said polymeric nanoparticles are synthesized by dissolving norfloxacin and Eudragit-RL100 in a water-miscible organic solvent, injecting the organic phase into an aqueous phase containing a stabilizer, and homogenizing the mixture to form said nanoparticles; wherein said in-situ gel medium is prepared by dissolving sodium alginate in distilled water with continuous stirring, adding gellan gum, incorporating said norfloxacin-loaded polymeric nanoparticles into the polymeric solution, and adjusting the tonicity with sodium chloride.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR DEVELOPING NIFEDIPINE NANOPARTICLE-LOADED ORODISPERSIBLE FILMS

APPLICATION NO.: 202411051928

INVENTORS:

HIMANSHU GAUTAM (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. KALPANA (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. PRATIMA KATIYAR (SCHOOL OF PHARMACEUTICAL SCIENCES), VIPIN MAURY (SCHOOL OF PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a system for developing Nifedipine nanoparticle-loaded orodispersible films, said system comprising: a nanosuspension preparation unit configured for developing Nifedipine nanoparticles via a solvent-antisolvent sono-precipitation method; a film formation unit configured for integrating said Nifedipine nanoparticles into orodispersible films via a solvent casting approach; said orodispersible films comprising a film former, a plasticizer, and said Nifedipine nanoparticles; a characterization unit configured for evaluating the particle size, polydispersity index, zeta potential, and scanning electron microscopy images of said Nifedipine nanoparticles; an X-ray diffraction unit configured for determining the amorphous phase of said Nifedipine nanoparticles in said orodispersible films; an in- vitro drug release unit configured for analyzing the cumulative drug release from said orodispersible films.

ANTI LUNG CANCER COMPOUND FROM CROTON BONPLANDIANUM

APPLICATION NO.: 202411051907

INVENTORS:

AMAN SINGH PATEL (SCHOOL OF PHARMACEUTICAL SCIENCES), DR. PRATIMA KATIYAR (SCHOOL OF PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a system for identifying potential anti-cancer phytocompounds in an ethanolic extract of Croton bonplandianum, said system comprising a gas chromatography-mass spectrometry (GC-MS) module configured to analyse the ethanolic extract of Croton bonplandianum to identify phytocompounds, a molecular docking module configured to evaluate the binding affinity of the identified phytocompounds with proteins specific to lung cancer, a pharmacokinetic analysis module configured to assess the ADMET capabilities of the identified phytocompounds based on pharmacokinetic characteristics, and a molecular dynamics modeling module configured to confirm the interaction between phytocompounds and proteins through simulation studies.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR PREPARATION OF SILVER NITRATE POLYMERIC TRIPLE LAYERED SCAFFOLDS

APPLICATION NO.: 202411051930

INVENTORS:

PRIYANSHU JAISWAL (SCHOOL OF PHARMACEUTICAL SCIENCES), AJAY KUMAR (SCHOOL OF PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a system for the management of burn injuries, comprising a preparation unit for fabricating cellulose acetate/polyvinyl alcohol (PVA) based tri-layer nanofiber scaffolds loaded with silver nitrate and lavender oil, an electrospinning apparatus configured to fabricate said tri-layer nanofiber scaffolds through the electrospinning process, a characterization unit utilizing several analytical tools, including Scanning Electron Microscopy (SEM), Fourier Transform Infrared Spectroscopy (FTIR), and X-ray Diffraction (XRD), to investigate the architectural and compatibility properties of said nanofiber scaffolds, a testing unit configured to perform in vitro drug release studies in alkaline pH 9 to exhibit controlled release of the drug up to 10 hours.

GENTAMICINE ENTRAPPED PVA/POLYCAPROLACTONE SCAFFOLDS FOR THE MANAGEMENT OF DIABETIC WOUND HEALING

APPLICATION NO.: 202411051929

INVENTORS:

SHIVAM KUMAR (SCHOOL OF PHARMACEUTICAL SCIENCES), SHASHI KIRAN MISRA (SCHOOL OF PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a system for the management of diabetic wound healing, comprising a scaffold formed from polyvinyl alcohol (PVA) and polycaprolactone (PCL) polymers. Said scaffold is fabricated using electrospinning techniques to produce nanofibers. Gentamicin sulfate is incorporated within said scaffold to act as an antimicrobial agent. Said scaffold is designed to provide controlled release of said gentamicin sulfate over an extended period. Said scaffold exhibits a high surface area, porosity, and biocompatibility. Said scaffold is effective against both Gram-negative and Gram-positive bacteria.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

NIOSOMES-LOADED GEL FOR THE MANAGEMENT OF ECZEMA

APPLICATION NO.: 202411051927

INVENTORS:

MANISHA TRIVEDI (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR. ANUPRIYA KAPOOR (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR. SHASHI KIRAN MISRA (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR. AJAY KUMAR (SCHOOL OF PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a system for the topical delivery of Azithromycin, comprising a niosomal gel formulation wherein said niosomes are vesicular systems composed of non-ionic surfactants, encapsulated active ingredients within said niosomes prepared using the ether injection method, a gel matrix incorporating said niosomal formulation, comprising Carbopol 940, Methyl paraben, Propyl paraben, Propylene glycol, Triethanolamine, and water, optimized parameters for zeta potential, particle size, polydispersity index, and entrapment efficiency to enhance the stability and bioavailability of said Azithromycin-loaded niosomal gel, and a topical application mechanism for delivering said gel to the skin for the management of eczema.

TELMISARTAN LOADED ETHOSOMAL GEL FORMULATION

APPLICATION NO.: 202411051908

INVENTORS:

PALLAVI TIWARI (SCHOOL OF PHARMACEUTICAL SCIENCES),
MADHUP OJHA (SCHOOL OF PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a system for transdermal delivery of an antihypertensive drug, said system comprising an ethosomal suspension containing a phospholipid, cholesterol, ethanol, propylene glycol, water, and the antihypertensive drug Telmisartan; a gel formulation incorporating said ethosomal suspension, said gel formulation comprising Carbopol 934, distilled water, triethanolamine, and methyl paraben; wherein the ethosomal suspension is prepared by mixing phospholipid, cholesterol, and water at approximately 40A°C with gentle stirring, combining this mixture with a preheated mixture of ethanol, propylene glycol, and Telmisartan at approximately 40A°C, followed by stirring at approximately 1500 rpm, cooling, and probe sonication for size reduction;

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

IN SITU GEL LOADED NANOPARTICLES FOR WOUND HEALING

APPLICATION NO.: 202411051910

INVENTORS:

SAURABH PUNIA (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR. MEENAKSHI GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES) PHARMACEUTICAL SCIENCES)

ABSTRACT

The present disclosure provides a wound healing system comprising a gel matrix formulated from hydroxypropyl methylcellulose (HPMC), sodium alginate, and gellan gum. Nanoparticles are dispersed within said gel matrix, wherein said nanoparticles include calcium carbonate nanoparticles, zinc oxide nanoparticles, and gold nanoparticles. The gel matrix is designed to form in situ at the site of a wound, providing antibacterial and antioxidant properties to enhance wound healing.

FORMULATION AND EVALUATION OF MEDICATED CHEWING GUM OF CAFFEINE

APPLICATION NO.: 202411066337

INVENTORS:

PRAKASH CHANDRA GUPTA (SCHOOL OF PHARMACEUTICAL SCIENCES),
DR NISHA SHARMA (SCHOOL OF PHARMACEUTICAL SCIENCES),
JAY KUMAR (SCHOOL OF PHARMACEUTICAL SCIENCES, CSJMU)

ABSTRACT

Disclosed is a composition for a medicated chewing gum comprising caffeine in a concentration of 100 mg, polyvinylpyrrolidone (PVP) in a concentration of 400 mg, a plasticizer selected from the group consisting of castor oil and glycerin in a concentration range of 15-30 mg, dextrose in a concentration of 50 mg, beeswax in a concentration of 40 mg, talc in a concentration of 15 mg, magnesium stearate in a concentration of 5 mg, peppermint oil in a concentration of 6 mg, and calcium carbonate in a concentration range of 4-19 mg.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

CAPACITIVE TOUCH STYLUS PEN

APPLICATION NO.: 202411071927

INVENTORS:

VISHAL AWASTHI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
RAJ KRISHNA (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
PUSHPENDRA SINGH (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
ATUL KUMAR AGNIHOTRI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET))

ABSTRACT

Disclosed is a capacitive touch stylus pen comprising a central conductive rod disposed along a longitudinal axis. A plurality of layers of sodium chloride are disposed around said central conductive rod, wherein said sodium chloride layers are separated by a plurality of polythene layers positioned circumferentially around said central conductive rod. A non-conductive separator circumferentially surrounds said plurality of polythene layers and prevents direct contact between external conductive elements and said sodium chloride layers. An outer conductive covering encloses said non-conductive separator, wherein said outer conductive covering transmits capacitive input from a user's hand through said central conductive rod for interaction with a capacitive touchscreen. A tip is positioned at one end of said central conductive rod to facilitate capacitive interaction between said central conductive rod and a capacitive touchscreen.

CAPACITIVE TOUCH STYLUS WITH IONIC TRANSFER MECHANISM

APPLICATION NO.: 202411099273

INVENTORS:

VISHAL AWASTHI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
RAJ KRISHNA (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
PUSHPENDRA SINGH (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET)),
ATUL KUMAR AGNIHOTRI (SCHOOL OF ENGINEERING & TECHNOLOGY (UIET))

ABSTRACT

Disclosed is a capacitive touch stylus pen comprising a central conductive rod disposed along a longitudinal axis. A plurality of layers of sodium chloride are disposed around said central conductive rod, wherein said sodium chloride layers are separated by a plurality of polythene layers positioned circumferentially around said central conductive rod. A non-conductive separator circumferentially surrounds said plurality of polythene layers and prevents direct contact between external conductive elements and said sodium chloride layers. An outer conductive covering encloses said non-conductive separator, wherein said outer conductive covering transmits capacitive input from a user's hand through said central conductive rod for interaction with a capacitive touchscreen.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SYSTEM FOR COLLABORATIVE PEER-ASSESSMENT IN A PEDAGOGICAL ENVIRONMENT

APPLICATION NO.: 202411099268

INVENTORS:

DR. RASHMI GORE (SCHOOL OF TEACHER EDUCATION); DR SWASTI SRIVASTAVA (SCHOOL OF LIFESCIENCES AND BIOTECHNOLOGY)

ABSTRACT

Disclosed is a system for collaborative peer-assessment in a pedagogical environment, said system comprising a division of a plurality of students into groups for collaborative learning, wherein each student is assigned a set of multiple-choice questions (MCQs) based on preallocated topics. The system further includes a student-generated assessment framework, wherein each student authors a set of MCQs and administers such MCQs to at least one peer from said group, followed by an evaluation of responses. The system comprises a multi-layer assessment structure wherein said authored MCQs are progressively exchanged between different groups of students in a plurality of layers, each layer comprising an increasing number of students evaluating a progressively larger set of MCQs, facilitating peer-to-peer evaluation across multiple levels.

DYNAMIC SOCIO-ECONOMIC AND POLICY SIMULATOR

APPLICATION NO.: 202411043419

INVENTORS:

DR. POOJA SINGH (DEPARTMENT OF ECONOMICS), DR. SHARAD DIXIT (DEPARTMENT OF ECONOMICS)

ABSTRACT

The present disclosure provides a dynamic socio-economic and policy simulator utilizing artificial intelligence, comprising: a data integration module configured to collect and aggregate data from multiple sources, including census data, economic reports, and social media analytics; an agent-based modeling module configured to simulate interactions between individual agents, wherein said agents represent citizens, institutions, and government entities; a machine learning module incorporating neural networks and reinforcement learning algorithms, configured to evolve policy responses in real-time; a scenario analysis module configured to simulate different policy scenarios and potential impacts under varying conditions; an output module configured to generate forecasts on economic indicators, including employment rates, GDP growth,Etc.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR ENHANCING STUDY HABITS VIA DIGITAL DEVICE REDUCTION

APPLICATION NO.: 202411071925

INVENTORS:

DR. VIMAL SINGH (SCHOOL OF TEACHER EDUCATION), MS. MAHIMA TRIPATHI (SCHOOL OF TEACHER EDUCATION), MR. DESHDEEPAK (SCHOOL OF TEACHER EDUCATION),

ABSTRACT

The present disclosure provides a method for improving study habits and academic performance in adolescent students through digital device usage reduction, said method comprising the steps of: providing a five-week intervention program to said students; implementing a structured reduction in digital device usage, wherein in the first week, said students utilize digital devices for four hours per day, in the second week for three hours per day, in the third week for two hours per day, in the fourth week for one hour per day, and in the fifth week, said students refrain from using digital devices; monitoring and assessing the improvement in said students' study habits and academic outcomes throughout said intervention program; and encouraging alternative activities during digital device restriction periods to enhance said students' time management and focus on academic tasks.

POULTRY FEED COMPOSITION WITH PLANT-BASED OILSEED ADDITIVE FOR HEMATOLOGICAL ENHANCEMENT AND WEIGHT CONTROL

APPLICATION NO.: 202411099262

INVENTORS:

DR. AMAN RATHAUR (SCHOOL OF ADVANCED AGRICULTURE SCIENCES & TECHNOLOGY, C.S.J.M. UNIVERSITY KANPUR-208 024, UTTAR PRADESH, INDIA)

ABSTRACT

A poultry feed composition is disclosed, comprising a base feed material and a plant-based oilseed additive derived from Linum usitatissimum. Said oilseed additive includes a-linolenic acid and non-starch polysaccharides, present in the range of 2.5% to 10% by weight of the composition. Said composition supports hematological improvements in poultry and reduces weight gain. Components of said additive, such as non-starch polysaccharides, promote intestinal health by reducing digestive viscosity, while certain anti-nutritional factors help modulate enzymatic activity. Such composition provides a balanced approach for enhancing poultry health during various growth phases.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

CARBONATED SUGARCANE BEVERAGE

APPLICATION NO.: 202411099255

INVENTORS:

DR. HRADESH RAJPUT(DEPT. OF FOOD TECHNOLOGY, SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY), DR. SUDHIR KUMAR (DEPT. OF FOOD TECHNOLOGY, SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY) AND DR. AMAN RATHAUR (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY

ABSTRACT

Disclosed is a carbonated beverage containing sugarcane juice and soda. The beverage comprises a portion of sugarcane juice constituting approximately 40% by volume and a portion of soda constituting approximately 52% by volume. The beverage includes a mixture of black pepper and mint, alongside a blend of lemon and salt. The beverage undergoes carbonation at a pressure of 80 psi without the addition of preservatives, sugar, or acid. The combination of black pepper, mint, lemon, and salt enhances the phytochemical compounds within the beverage. The beverage offers a refreshing and nutritious alternative to conventional carbonated drinks by using natural ingredients while avoiding artificial additives. The prepared beverage is stored in an airtight container to maintain carbonation.

COMPOSITION FOR ENHANCING GRAIN YIELD AND REDUCING NUTRIENT LOSS IN AGRICULTURAL APPLICATIONS

APPLICATION NO.: 202411099244

INVENTORS:

ABHISHEK DWIVEDI (DEPARTMENT OF AGRONOMY, SCHOOL OF ADVANCED AGRICULTURE SCIENCES & TECHNOLOGY, CSJM UNIVERSITY, KANPUR (INDIA) 208024) & ROOP KISHOR PACHAURI (DEPARTMENT OF AGRONOMY, SCHOOL OF ADVANCED AGRICULTURE SCIENCES & TECHNOLOGY, CSJM UNIVERSITY, KANPUR (INDIA) 208024)

ABSTRACT

Disclosed is a composition for improving grain yield and net return in agricultural practices. The composition includes one-third dose of farm yard manure, one-third dose of vermicompost, and one-third dose of poultry manure. Such a composition delivers a balanced nutrient profile to crops while reducing nutrient loss due to leaching and volatilization. The composition is applied based on soil nutrient analysis and aims to substitute chemical fertilizers, providing a more cost-effective cultivation method. The application of the composition enhances both grain and straw yield, contributing to higher overall returns in agricultural production, while promoting sustainable soil health.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

FORMULATION OF PINEAPPLE PULP CANDY INFUSED WITH BARNYARD MILLET

APPLICATION NO.: 202411099238

INVENTORS:

SUDHIR KUMAR (ASSISTANT PROFESSOR, DEPARTMENT OF FOOD TECHNOLOGY, SAAST, CSJMU, KANPUR) AND HRADESH RAJPUT (ASSISTANT PROFESSOR, DEPARTMENT OF FOOD TECHNOLOGY, SAAST, CSJMU, KANPUR)

ABSTRACT

Disclosed is a confectionery composition comprising pineapple pulp blended with barnyard millet flour, wherein the millet enhances the nutritional profile by providing dietary fiber and a low glycemic index. The composition further includes a gelling agent selected from gelatin or pectin, uniformly blended with the pineapple pulp and barnyard millet. A sweetening agent is distributed throughout the composition. The mixture is heated and molded into a candy form, with an optimized ratio of barnyard millet to pineapple pulp to improve texture and taste. The confectionery offers a unique blend of flavors while providing enhanced nutritional benefits, suitable for healthy snacking options.

METHOD FOR PREPARING SOYBEAN-MAIZE FLOUR BLENDED COOKIES

APPLICATION NO.: 202511018293

INVENTORS:

DR. HRADESH RAJPUT(DEPARTMENT OF FOOD TECHNOLOGY), DR. SUDHIR KUMAR(DEPARTMENT OF FOOD TECHNOLOGY), MR. KULDEEP KUMAR SINGH(DEPARTMENT OF FOOD TECHNOLOGY),

ABSTRACT

Disclosed is a method for preparing a soybean-maize flour blended cookie. The method comprises blending soybeand flour and maize flour in predetermined proportions to create a flour blend, wherein such proportions range from 50:50 to 90:10 soybean flour to maize flour. Said flour blend is mixed with additional cookie ingredients, including a fat source, a sugar source, and a leavening agent, to form a cookie dough. Said cookie dough is shaped into a desired form and baked at a temperature and for a time sufficient to produce a baked cookie with enhanced protein and fiber content and improved sensory attributes.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

HERBAL METHOD FOR TREATING SUBCLINICAL MASTITIS IN DAIRY COWS

APPLICATION NO.: 202511018284

INVENTORS:

DR. AMAN RATHAUR(SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY), DR. HIMANSHU TRIVEDI(SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY),

ABSTRACT

Disclosed is a method to treat subclinical mastitis in dairy cows. The method includes preparing a herbal composition by grinding aloe vera leaves to form a greenish paste, mixing turmeric powder, castor oil, and lemon juice with said paste, and grinding the mixture further to form a reddish paste. The method further includes applying said herbal composition to udders and teats eight times daily for ten days. The treatment reduces somatic cell count and improves milk composition parameters such as pH, fat, solid-not-fat, protein, lactose, electrical conductivity, and chloride content.

PREPARATION OF MULTIGRAIN COOKIES INCORPORATED WITH MADHUCA LONGIFOLIA

APPLICATION NO.: 202411099245

INVENTORS:

SUDHIR KUMAR (DEPARTMENT OF FOOD TECHNOLOGY, SAAST), HRADESH RAJPUT (DEPARTMENT OF FOOD TECHNOLOGY, SAAST) AND AMAN RATHAUR (SCHOOL OF ADVANCED AGRICULTURE SCIENCES & TECHNOLOGY)

ABSTRACT

Disclosed is a multigrain cookie formulation comprising a base made from a blend of multigrain flour, Madhuca longifolia extract, a sweetening agent, a leavening agent, and an emulsifier. Said formulation enhances antioxidant properties, improves flavor, and increases nutritional value compared to conventional multigrain cookie formulations. The process includes combining Madhuca longifolia extract with multigrain flour to prepare a dough, followed by the addition of a sweetening agent, leavening agent, and emulsifier. The dough is shaped into cookie forms and baked under specific conditions to produce multigrain cookies with enhanced sensory and health benefits.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ROOFTOP FARMING SYSTEM WITH AUTOMATED IRRIGATION AND DRAINAGE CONTROL

APPLICATION NO.: 202411099242

INVENTORS:

ROOP KISHOR PACHAURI (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY) AND ABHISHEK DWIVEDI (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY)

ABSTRACT

Disclosed is a rooftop farming system comprising soil moisture sensors monitoring moisture levels in plant beds, an irrigation assembly connected to said sensors supplying water based on moisture levels, and a weather forecasting unit adjusting water distribution based on forecasts. A drainage assembly captures excess water, and a recycling unit connected to said drainage assembly recycles excess water for reuse. A smart controller regulates water distribution and drainage, communicating with said sensors, said forecasting unit, said irrigation assembly, and said drainage assembly to ensure efficient water use and prevent over-watering or under-watering. The system enhances rooftop farming by conserving water and promoting optimal plant health with minimal manual intervention.

COMPOSITION AND METHOD FOR PREPARING NUTRIENT-ENRICHED MUFFINS USING JACKFRUIT RIND POWDER

APPLICATION NO.: 202411043425

INVENTORS:

HRADESH RAJPUT (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY), SUDHIR KUMAR (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY)

ABSTRACT

The present disclosure discloses a system (100) for preparing muffins comprising Jackfruit rind powder, wherein said system (100) comprises a receiving unit (102) to receive a Jackfruit rind, wherein said rind is obtained from Artocarpus heterophyllus; a processing apparatus (104) for converting said Jackfruit rind into Jackfruit rind powder, wherein such powder is rich in nutrients including Vitamin C and minerals; a mixing apparatus (106) for combining said Jackfruit rind powder with bakery flour in predetermined ratios, wherein said ratios range from 0% to 50% of Jackfruit rind powder to total flour; a baking apparatus (108) for producing muffins from said mixture of Jackfruit rind powder and bakery flour; an analysis module (110) for evaluating the quality of said muffins.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

FORTIFIED FLAVOURED YOGHURT

APPLICATION NO.: 202411043424

INVENTORS:

SUDHIR KUMAR (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY), HRADESH RAJPUT (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY)

ABSTRACT

The present disclosure provides a fortified flavoured yoghurt comprising a yoghurt base; an iron fortification component infused within the yoghurt base; barnyard millet incorporated into the yoghurt base; one or more flavouring agents added to the yoghurt base; and a stabilizing agent that ensures the stability and bioavailability of the iron fortification component and barnyard millet during production, processing, distribution, and consumption.

METHOD FOR PRODUCING FUNCTIONAL YOGURT COMPRISING SEA BUCKTHORN SEED OIL

APPLICATION NO.: 202411099247

INVENTORS:

DR. AMAN RATHAUR (SCHOOL OF ADVANCED AGRICULTURE SCIENCES & TECHNOLOGY, C.S.J.M. UNIVERSITY KANPUR-208 024, UTTAR PRADESH, INDIA)

ABSTRACT

The present disclosure provides a method for producing a functional yogurt comprising sea buckthorn seed oil, wherein the method comprises the steps of: selecting a high-quality sea buckthorn seed oil, wherein said sea buckthorn seed oil comprises unsaturated fatty acids, vitamins, antioxidants, tocopherols, tocotrienols, phytosterols, flavonoids, carotenoids, and polyphenols; blending said sea buckthorn seed oil with milk and probiotic cultures under controlled conditions to initiate fermentation, wherein said fermentation is optimized to enhance the fatty acid composition and antioxidant properties of said yogurt; fermenting said mixture until said yogurt achieves desired sensory characteristics, including texture, flavor, and consistency; and cooling said yogurt to a temperature that stabilizes said probiotic cultures and maintains said antioxidant properties.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR PRODUCING JAM COMPOSITION FROM WATERMELON RIND AND PEA PEEL

APPLICATION NO.: 202411099251

INVENTORS:

DR. HRADESH RAJPUT (DEPARTMENT OF FOOD TECHNOLOGY, SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY, CSJMU, KANPUR), DR. SUDHIR KUMAR (DEPARTMENT OF FOOD TECHNOLOGY, SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY, CSJMU, KANPUR) AND DR. SONI GUPTA (SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY)

ABSTRACT

The present disclosure provides a method for producing a jam composition from watermelon rind and pea peel, said method comprising the steps of preparing watermelon rind by washing, peeling, and chopping, preparing pea peel by washing and removing any residual moisture, mixing watermelon rind and pea peel in predetermined ratios, wherein the ratios vary between 0% to 100% watermelon rind and pea peel, boiling the mixture to a temperature between 90°C to 100°C for a time sufficient to achieve a desired consistency, adding a sweetening agent and pectin to said mixture to aid in the gelling process, adjusting the pH of said mixture by incorporating an acidifying agent, cooling the resulting jam composition to room temperature, and storing said jam composition in a sealed container for long-term preservation.

ROBOTIC SOIL PREPARATION APPARATUS FOR ADAPTIVE TILLING, AERATION, AND ORGANIC MATTER DISPERSAL

APPLICATION NO.: 202411099250

INVENTORS:

ROOP KISHOR PACHAURI (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY) & ABHISHEK DWIVEDI (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY)

ABSTRACT

The present disclosure provides a robotic soil preparation apparatus comprising a navigation assembly configured to autonomously traverse a field surface, an adjustable blade mechanism interconnected with the navigation assembly, the adjustable blade mechanism being pivotally engaged to vary soil penetration depth based on field conditions, a soil condition sensor module positioned adjacent to the adjustable blade mechanism, wherein the soil condition sensor module detects soil moisture and hardness, such that the adjustable blade mechanism alters tilling depth responsively, a pneumatic aeration system aligned with the soil condition sensor module, wherein the pneumatic aeration system is actuated upon detection of compact soil to ensure consistent soil aeration during operation, and a soil amendment system operatively connected to the adjustable blade mechanism.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

COOKIE FOR BREAST CANCER

APPLICATION NO.: 202411043420

INVENTORS:

YUSRA RABIA FATIMA (SCHOOL OF ADVANCED AGRICULTURE SCIENCES AND TECHNOLOGY)

ABSTRACT

The present disclosure provides a system for manufacturing a consumable item for breast cancer, the system comprising a mixing station to combine dry ingredients comprising wheat flour, ragi, wheat grass powder, date powder, raisins, dried blueberry, oats, walnuts, and wet ingredients comprising flaxseed oil, strawberry and blueberry puree; a forming station form small balls from the combined ingredients, fill the center of said balls with mixed berries puree, shape said balls into square cookies, cover said cookies with some date powder, and bake said cookies at 175°Celsius for about 25 minutes; a cooling station cool down said cookies at room temperature; a decoration station drip sugar-free white chocolate on said cooled cookies and dust said cookies with dried strawberry powder in the shape of a ribbon wherein said dried strawberry powder in the shape of a ribbon symbolizes breast cancer; wherein said system is adapted to produce said cookies for consumption provide health benefits in breast cancer.

SYSTEM FOR SECURE BINDING AND ARRANGEMENT OF LEGAL DOCUMENTS USING ADJUSTABLE PRESSING MEMBERS

APPLICATION NO.: 202411099240

INVENTORS:

DR. SHASHIKANT TRIPATHI, DR. RAHUL TIWARI, SMRITI ROY, DIVYANSH SHUKLA (ATAL BIHARI VAJPAYEE SCHOOL OF LEGAL STUDIES)

ABSTRACT

Disclosed is a legal document arranging and binding system comprising a housing unit, plural actuators mounted on the housing unit, pressing members connected to the actuators via gear and rack units, binding channels formed in the pressing members, binding compartments sliding within the binding channels, and a central lifting assembly linked to the actuators through hydraulic pistons.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR PREPARING MICROSPHERES CONTAINING A DRUG FOR CONTROLLED RELEASE

APPLICATION NO.: 202411099248

INVENTORS:

DR.ANUPRIYA KAPOOR PALLAVI TIWARI, DR.SHASHIKIRAN MISRA, NEERAJ KUMAR PRAJAPATI, DR. NEHA SHUKLA, SMRITI ROY (ATAL BIHARI VAJPAYEE SCHOOL OF LEGAL STUDIES)

ABSTRACT

Disclosed is a method for preparing microspheres containing a drug for controlled release, said method comprising: dissolving a drug and a polymer in an organic solvent to form a polymeric drug solution; pouring said polymeric drug solution into an aqueous solution containing an emulsifying agent under continuous stirring; evaporating said organic solvent during the emulsification process to convert dispersed droplets into microspheres; collecting and filtering said microspheres from the solution; rinsing said microspheres with distilled water to remove residual emulsifying agent; and drying said microspheres at room temperature to obtain the final drug-loaded microspheres.

ADJUSTABLE MOUNTING SYSTEM FOR SOLAR PANEL ARRAYS WITH INTEGRATED CLAMPING AND SECURING MECHANISMS

APPLICATION NO.: 202411044430

INVENTORS:

PROF. VINAY KUMAR PATHAK (VICE CHANCELLOR)

ABSTRACT

Disclosed is a system for mounting solar panels. The system comprises a clamp configured to be joined to an external peripheral edge of a solar panel frame. The clamp includes a clamp main body with a connector segment having a quadrilateral aperture, and a rectangular tube introduced into said aperture and joined to the connector segment. Additionally, the system features an installation dock attached to a support structure, incorporating at least three pairs of brace elements installed in parallel to a perpendicular direction relative to the support structure, a primary strap formed on the attachment segment with a penetration opening for introducing the rectangular tube, and a securing plate joined to upper and lower surfaces of the brace elements and the attachment segment. The securing plate includes a primary securing unit and a secondary securing unit.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

AUTOMATED LUGGAGE AND EQUIPMENT STORAGE SYSTEM

APPLICATION NO.: 202411099243

INVENTORS:

DR. SHASHIKANT TRIPATHI, DR. RAHUL TIWARI, SMRITI ROY, DIVYANSH SHUKLA
(ATAL BIHARI VAJPAYEE SCHOOL OF LEGAL STUDIES)

ABSTRACT

Disclosed is an automated luggage and sports equipment storage system comprising a storage station, retractable hooks attached via pivot joints, cleaning brushes operatively connected to the retractable hooks, water jets linked to the cleaning brushes, and drying fans adjacent to the cleaning brushes. Locking units are integrated into the retractable hooks, with sensors connected to the locking units. A control panel coupled to the sensors operatively actuates the retractable hooks, cleaning brushes, and drying fans to facilitate automated storage and maintenance of the equipment.

LEGAL CASE STORAGE AND RETRIEVAL SYSTEM WITH ACTUATOR-DRIVEN HOLDER MOVEMENT-CONTROLLED LEGAL DISPLAY SYSTEM FOR ORGANIZED DOCUMENT PRESENTATION

APPLICATION NO.: 202411099229

INVENTORS:

DR. SHASHIKANT TRIPATHI, DR. RAHUL TIWARI, SMRITI ROY, DIVYANSH SHUKLA
(ATAL BIHARI VAJPAYEE SCHOOL OF LEGAL STUDIES)

ABSTRACT

The present disclosure discloses a legal case storage and retrieval system comprising a storage chamber supporting a holder section. The system includes a pair of actuators. A first actuator drives a dispensing unit connected to a gear assembly that moves the holder section along a toothed pathway. A second actuator is coupled to a retrieval unit positioned below the holder section to adjust elevation of the holder section.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

SUPPORT SYSTEM FOR RAILWAY BERTHS

APPLICATION NO.: 202411071548

INVENTORS:

MR. AHMAD ABDULLAH (DEPARTMENT OF LIFELONG LEARNING & EXTENSION, CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KALYANPUR, KANPUR, KANPUR NAGAR, UTTAR PRADESH, 208024, CSJMU)

ABSTRACT

The present disclosure provides a support system for a railway berth comprising a rod positioned beneath a lower berth. The rod rotates 90 degrees about an axis. A pressure-based locking mechanism is integrated with said rod and engages with hooks affixed to said lower berth. A load distribution joint is attached to said rod. The load distribution joint extends toward a middle berth and directly interacts with said middle berth to enhance stability.

METHOD AND SYSTEM FOR RECOVERING MERCURY FROM A SOLUTION

APPLICATION NO.: 202411066801

INVENTORS:

DR. ROHIT SINGH (DEPARTMENT OF CHEMISTRY, D.A-V. (PG) COLLEGE, KANPUR), DR. MONIKA AGARWAL (DEPARTMENT OF CHEMISTRY, D.A-V. (PG) COLLEGE, KANPUR)

ABSTRACT

Disclosed is a method for recovering mercury from a solution, comprising the steps of: providing a solution containing mercury salts; adding a organic sulfite to said solution; and converting said mercury salts to elemental mercury, wherein said elemental mercury is recovered from said solution.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

STUDY OF ELECTROMAGNETIC PROPERTIES OF GRAPHENE BASED POLY (A-METHYL STYRENE) AND POLYANILINE INTERP

APPLICATION NO.: 202411066457

INVENTORS:

MOHD. MERAJ JAFRI (DEPARTMENT OF CHEMISTRY, SCHOOL OF BASIC SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a method for synthesizing an interpenetrating polymer network (IPN) comprising: a. refluxing a suspension of α-methyl styrene (AMS) and graphene in dimethylformamide (DMF) solvent in the presence of benzoyl peroxide (BPO) at approximately 70°C for 2.0 hours to obtain a graphene-based Poly (α-methyl styrene) (PAMS); b. precipitating said graphene-based PAMS in methanol and drying to obtain a constant weight; c. synthesizing polyaniline (PANI) by polymerizing aniline monomer in an acidic medium containing an oxidizing agent at 0°C; d. polymerizing said graphene-based PAMS and said PANI in DMF in the presence of divinyl benzene (DVB) and BPO under an inert atmosphere of nitrogen at approximately 80°C for 2.5 hours to form said IPN; e. vacuum drying said IPN to obtain a constant weight.

COMPOSITION TO ENHANCE SURFACTANT REACTIVITY BY POLYMER INTERACTION

APPLICATION NO.: 202511018295

INVENTORS:

AYUSHI SINGH(SCHOOL OF BASIC SCIENCES), PURUSHOTTAM SINGH NIRANJAN(SCHOOL OF BASIC SCIENCES), DHANANJAY DEY(SCHOOL OF BASIC SCIENCES),

ABSTRACT

Disclosed is a composition comprising a polymeric substance selected from polyacrylamide. Said polymeric substance interacts with surfactants, including sodium lauryl sulfate, sodium caprylate, sodium decanoate, sodium N-lauroylsarcosine, sodium laurate, sodium laureth sulfate, sodium salt of bis(1-dodecenyl-succinamic acid), N-cetyltrimethylammonium bromide, N-cetylpyridinium chloride, N-dodecyltrimethylammonium bromide, and benzalkonium chloride. Such interaction reduces the critical micelle concentration of surfactants in aqueous solutions within a temperature range of 5°C to 40°C. The interaction promotes micellization of surfactants in the presence of said polymeric substance, thereby improving surface activity.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

LOCKING ASSEMBLY FOR SLIDING PANELS

APPLICATION NO.: 202511018346

INVENTORS:
DR. MANISH KAPOOR(DEPARTMENT OF PHYSICS

ABSTRACT

Disclosed is a locking assembly for sliding panels. The locking assembly comprises a retention mechanism including a spring-biased latch embedded within a panel frame and engaging with a locking recess formed on a guide rail. The retention mechanism includes a detachable locking component affixed externally to the panel frame to enable non-destructive removal and reattachment. The assembly further comprises a force modulation unit having an adjustable cam positioned adjacent to the retention mechanism and configured to alter the compression force of the spring-biased latch during engagement. The adjustable cam includes a groove aligning with a corresponding channel of the panel frame for stable positioning. The locking assembly also includes a thermal adjustment device comprising a thermally sensitive element affixed to the force modulation unit, dynamically modifying the adjustable cam's position in response to thermal expansion or contraction of the panel frame. Additionally, a vibration control assembly comprises elastic pads coupled to the panel frame and guide rail, providing damping to prevent dislodgment of the spring-biased latch during operation.

METHOD TO ENHANCE ELECTRICAL PROPERTIES OF INDIUM TIN OXIDE FILMS

APPLICATION NO.: 202511018287

INVENTORS:
DR. ANJU DIXIT(DEPARTMENT OF PHYSICS), DR. SHIKHA SHUKLA(DEPARTMENT OF PHYSICS), DR. P. S. DOBAL(DEPARTMENT OF PHYSICS),

ABSTRACT

Disclosed is a method for enhancing electrical properties of indium tin oxide films. The method includes dissolving indium(III) chloride hydrate in a solvent comprising methanol under magnetic stirring at room temperature to form a solution. Predetermined quantities of ammonium fluoride, corresponding to dopant atomic ratios of 0.01 to 0.05, are added to said solution. Said solution is subjected to drying under supercritical conditions of ethyl alcohol in a Pyrex glass beaker placed in an autoclave. The resultant samples are annealed at approximately 500°C in air for two hours to enhance crystallinity.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

INTERACTION OF POLY ETHYLENE GLYCOL WITH CETYL PYRIDINIUM CHLORIDE(CPC) AND BENZALKONIUM CHLORIDE

APPLICATION NO.: 202411066311

INVENTORS:

DR RATNA SHUKLA (DEPARTMENT OF CHEMISTRY, SCHOOL OF BASIC SCIENCES, CSJMU)

ABSTRACT

Disclosed is a method for studying the interaction between Polyethylene Glycol (PEG) and Cetyl Pyridinium Chloride (CPC), comprising the steps of preparing an aqueous solution of Polyethylene Glycol and Sodium Hydroxide (NaOH) in doubly distilled water; preparing an aqueous solution of CPC in doubly distilled water without further purification; mixing specified quantities of said Polyethylene Glycol solution, said NaOH solution, and said CPC solution in a 100 ml glass vessel to form a reaction mixture with a total volume of 50 ml; measuring the surface tension of said reaction mixture using a stalagometer to determine the Critical Micelle Concentration (CMC) from the point of intersection of two straight lines plotted between surface tension and log[Surfactant]; measuring the conductivity of said reaction mixture to determine the CMC from the point of intersection of two straight lines plotted between specific conductivity and [Surfactant]; calculating the surface excess concentration (τ1) using the Gibbs equation from surface or interfacial data; determining the area per molecule at the interface (sa1) using the calculated surface excess concentration; calculating the standard Gibbs free energy change (ΔGoad), standard entropy change (ΔSoad), and standard heat enthalpy change (ΔHoad) for adsorption using thermodynamic relations.

APPARATUS FOR DYEING COTTON FABRIC USING NATURAL DYES AND MORDANTS

APPLICATION NO.: 202411066313

INVENTORS:

DR RATNA SHUKLA (DEPARTMENT OF CHEMISTRY, SCHOOL OF BASIC SCIENCES, CSJMU)

ABSTRACT

Disclosed is an apparatus for dyeing cotton fabric, comprising a reaction chamber to hold a dyeing solution, wherein said dyeing solution comprises water, a mixture of Mangifera indica leaves, Azadirachta indica leaves, and a surfactant selected from the group consisting of cetyltrimethylammonium bromide (CTAB) and sodium lauryl sulfate (NaLS); a heating element operatively connected to said reaction chamber, wherein said heating element maintains the temperature of said dyeing solution at approximately 80 to 120 degrees Celsius; a stirring mechanism positioned within said reaction chamber, said stirring mechanism provides constant agitation to said dyeing solution during the dyeing process; a filtration system operatively connected to said reaction chamber, said filtration system filters the dye extracted from the dyeing solution; a mordant preparation unit comprising one or more beakers, wherein said mordant preparation unit prepares natural mordant solutions from harda, bahera, and orange peel by soaking and heating these materials in water; a post-dyeing treatment compartment, said post-dyeing treatment module treats the dyed cotton fabric with said natural mordant solutions; a rinsing station operatively connected to said post-dyeing treatment module; a drying unit; and a pressing device.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

ENHANCEMENT IN MAGNETIC AND CATALYTIC PROPERTIES OF TITANIUM CARBIDE BY COBALT AND IRON DOPING

APPLICATION NO.: 202411066450

INVENTORS:

AKHILESH KUMAR (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), DR. ANJU DIXIT (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), PRABAL PRATAP SINGH (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), RAGHWENDRA SINGH (DEPARTMENT OF MATHEMATICS, SCHOOL OF BASIC SCIENCES, CSJMU)

ABSTRACT

The present disclosure discloses a method for enhancing the magnetic and catalytic properties of titanium carbide by cobalt and iron doping, comprising: preparing a mixture of titanium carbide with cobalt and iron precursors; performing a sol-gel process to achieve uniform doping of cobalt and iron in titanium carbide; conducting thermal treatment to stabilize the doped titanium carbide; characterizing the doped titanium carbide using techniques such as X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), and energydispersive X-ray spectroscopy (EDX) to analyze structure, morphology, and composition; measuring the semiconducting properties, including band gap, of the doped titanium carbide; and evaluating the magnetic properties of the doped titanium carbide.

METHOD FOR PREPARING AMORPHOUS THIN FILMS USING CHALCOGENIDE GLASSY ALLOYS

APPLICATION NO.: 202411071920

INVENTORS:

S. SHUKLA (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), ANJU DIXIT (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES),

ABSTRACT

The present disclosure provides a method for preparing amorphous thin films comprising the steps of: weighing selenium, indium, and antimony elements based on atomic percentages using an electronic balance; placing said elements into quartz ampoules and sealing said ampoules under vacuum conditions; heating said ampoules within an electric furnace to a temperature of approximately 1000°C for 10-12 hours; rocking said ampoules to achieve homogeneity within the molten materials; quenching said molten materials by rapidly cooling said ampoules in an ice-cooled bath, thereby forming glassy alloys; confirming the glassy nature of said alloys through X-ray diffraction analysis; preparing thin films from said glassy alloys using vacuum evaporation techniques at room temperature; allowing said thin films to achieve thermodynamic equilibrium by maintaining said thin films in a deposition chamber for approximately 24 hours in darkness; obtaining optical transmission spectra of said thin films over a wavelength range of approximately 500 nm to 2500 nm; and calculating optical parameters selected from refractive index, extinction coefficient, and absorption coefficient based on said optical transmission spectra.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR SYNTHESIZING LEAD ZIRCONATE TITANATE

APPLICATION NO.: 202411066333

INVENTORS:

DR. ANJU DIXIT (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), AYUSHI SINGH (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), DR AWANISH KUMAR BAJPEYI (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), DR PRATAP NARAYAN PATHAK (DEPARTMENT OF MATHEMATICS, SCHOOL OF BASIC SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a method for synthesizing lead zirconate titanate ($Pb(Zr0.42)Ti0.58)O3$), the method comprising mixing powder of lead oxide (PbO), zirconium ($ZrO2$), titanium ($TiO2$), and lanthanum oxide ($La2O3$); calcining the mixed powders at a temperature of 850°C for a duration of 4 hours to form a perovskite phase; hot forging the calcined powders at a temperature of 1150°C under a pressure of 70 MPa for a duration of 2 hours to enhance grain orientation; sintering the hot-forged calcined powder at a temperature of 1250°C for a duration of 2 hours to achieve high density and optimal grain structure; applying an electric field of 3 kV/mm at a temperature of 150°C for a duration of 20 minutes during the poling process; and cooling the material under the applied electric field to lock in the domain alignment.

WEARABLE TEXTILE ANTENNA WITH REDUCED SAR FOR DIFFERENT WCS, WBAN'S, BCWC AND BIOTELEMETRY APPLICAT

APPLICATION NO.: 202411066343

INVENTORS:

APARNA SINGH (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), PROF. R.K. DWIVEDI (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES, CSJMU)

ABSTRACT

The present disclosure provides a system for a wearable textile antenna, comprising a flexible substrate formed from a textile material; a conductive element integrated with said flexible substrate, said conductive element configured to transmit and receive electromagnetic signals; a ground plane positioned in proximity to said conductive element, wherein said ground plane and said conductive element together form an antenna structure; a feed system operatively connected to said conductive element and said ground plane for signal propagation; wherein said system is characterized by a reduced Specific Absorption Rate (SAR) and is suitable for use in Wireless Communication Systems (WCS), Wireless Body Area Networks (WBANs), Body-Centric Wireless Communication (BCWC), and biotelemetry applications.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

BISMUTH DOPED TIO2 INTERFACE WITH VARYING THICKNESS IN PT/ TIO2/ (P/ N) - SI MOS SCHOTTKY DIODE

APPLICATION NO.: 202411066459

INVENTORS:

NABIYA IQBAL (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), DR. ANJU DIXIT (DEPARTMENT OF PHYSICS, SCHOOL OF BASIC SCIENCES), DR PRAMOD SINGH DOBAL (DEPARTMENT OF PHYSICS, VSSD COLLEGE, CSJMU)

ABSTRACT

The present disclosure provides an apparatus for depositing a Bi-doped TiO2 layer on a silicon substrate, comprising a substrate cleaning unit comprising a sprayer to spray hydrofluoric acid (HF) onto a surface of a silicon substrate to remove an oxide layer, a deionized water rinsing tank to receive the HF treated silicon substrate, and a drying unit to dry the HF treated silicon substrate exited from the water rinsing tank. The apparatus further comprises a surface passivation unit configured to adjust a temperature profile and a hydrogen concentration to improve silicon surface passivation, an atomic layer deposition (ALD) unit comprising a substrate holder, a first atomizer to atomize a mixture of tris (tert-butoxy) silanol and trimethylaluminum (TMA), and a second atomizer to atomize a bismuth precursor and Titanium Dioxide (TiO2) precursors. The apparatus further comprises a post-deposition treatment unit, an annealing furnace, and a control unit to manage the doping level and thickness.

BIODEGRADABLE POLYMER SYNTHESIS SYSTEM

APPLICATION NO.: 202411055920

INVENTORS:

PROF. R.K. DWIVEDI (DIRECTOR CDC), DR. MEET KAMAL (CHRIST CHURCH COLLEGE, KANPUR), SAKSHI SHUKLA (CHRIST CHURCH COLLEGE, KANPUR)

ABSTRACT

Disclosed is a biodegradable polymer synthesis system, comprising a first solution comprising dioxane, sodium malonate, and coniferyl alcohol; a second solution comprising hydrogen peroxide, manganese sulphate, and mushroom powder; a starch slurry comprising starch, silica, and distilled water; a mixing apparatus configured to combine the first solution and the second solution dropwise; a magnetic stirrer configured to maintain continuous stirring of the combined solution with the starch slurry for a predetermined duration at ambient room temperature; and a drying unit configured to dry the resultant polymer.

DETAILS OF PATENT FILED AND PUBLISHED IN THE NAME OF 'CSJMU'

METHOD FOR SYNTHESIZING SILICON DIOXIDE NANOPARTICLES FROM RICE HUSK

APPLICATION NO.: 202411055922

INVENTORS:

DR. MEET KAMAL (CHRIST CHURCH COLLEGE, KANPUR), MS. JUHI SINGH (CHRIST CHURCH COLLEGE, KANPUR)

ABSTRACT

Disclosed is a method for synthesizing silicon dioxide nanoparticles from rice husk, comprising the steps of converting said rice husk into rice husk ash (RHA) by burning; leaching said RHA with a pre-heated 3M sodium hydroxide (NaOH) solution; cleaning said RHA with 3M citric acid and water using an ultrasonic cleaner; heating and agitating said mixture under a controlled atmosphere at a temperature of 80°C; neutralizing said sample by adding citric acid until a pH of 7 is achieved using a continuous flow system; forming a sodium silicate solution; allowing said sample to form silica gel; breaking and washing said gel with deionized distilled water; drying said gel at a temperature of 80°C in a controlled humidity chamber; filtering said sample using vacuum filtration to discard solids.

SYSTEM AND METHOD FOR CONVERTING PLASTIC WASTE INTO GRAPHITIC CARBON

APPLICATION NO.: 202411055921

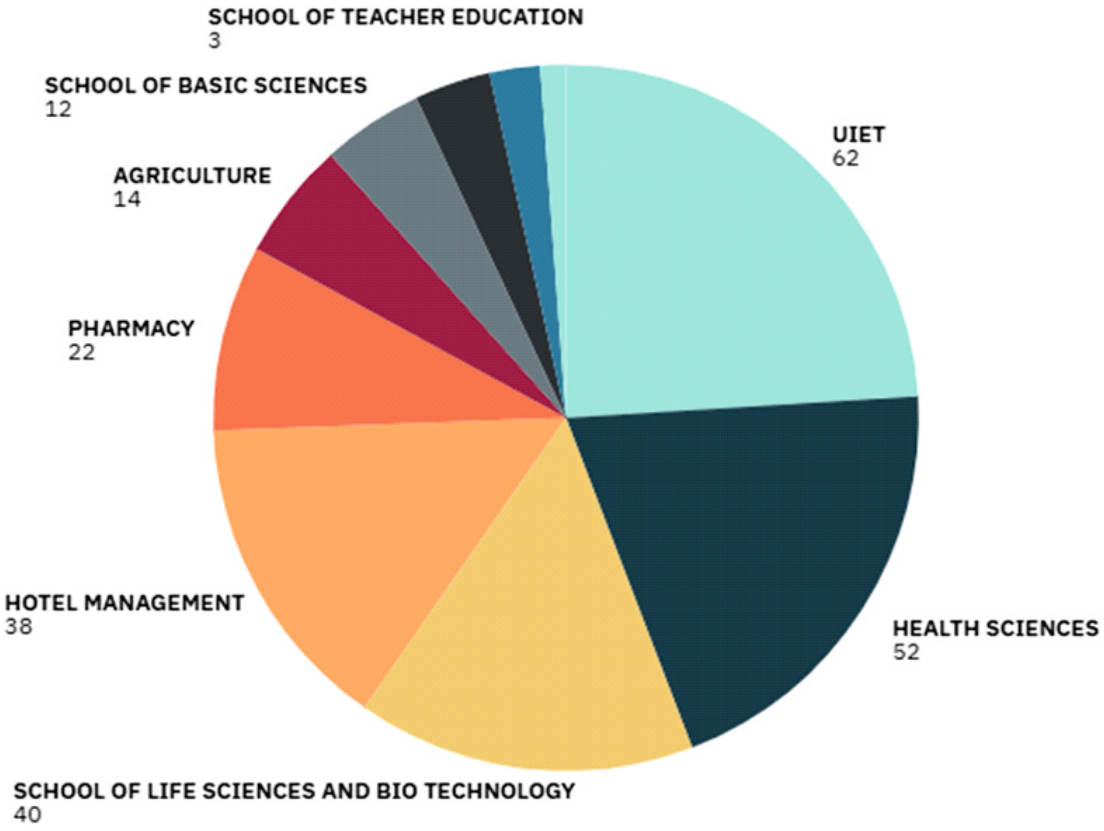
INVENTORS:

DR. MEET KAMAL (CHRIST CHURCH COLLEGE, KANPUR), MISS SHIREEN SHUKLA (CHRIST CHURCH COLLEGE, KANPUR)

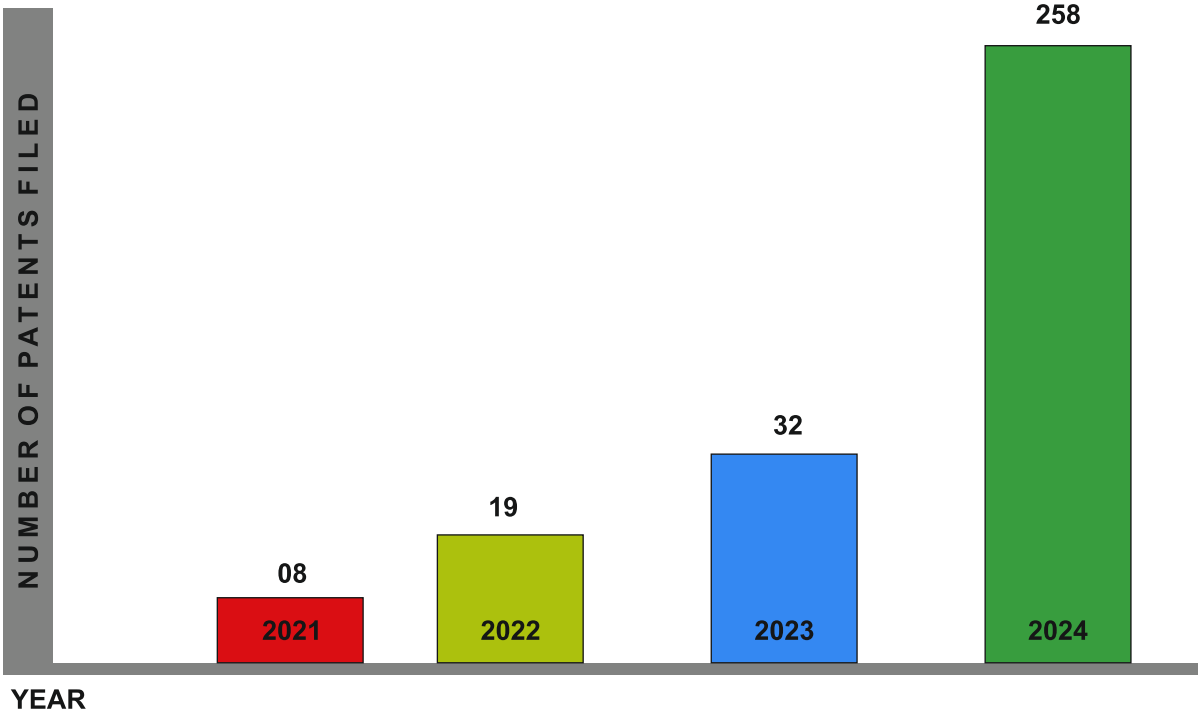
ABSTRACT

The present disclosure discloses a system for converting plastic waste into graphitic carbon, comprising a washing module configured to clean plastic waste, a separation module configured to segregate different types of plastic waste, a milling module configured to cut the plastic waste into small pieces, a pyrolysis module configured to heat the small pieces of plastic waste at a temperature of approximately 1000°C to produce carbon ash, a catalytic treatment module configured to mix the carbon ash with ethanol and a catalyst, and subsequently heat the mixture around 900°C for 2-3 hours, a filtration module configured to filter out the product from the treated mixture, a neutralization module configured to neutralize the filtered product using NaOH, an acid wash module configured to sonicate the neutralized product with dilute HCL, and an oven drying module configured to dry the acidwashed product at approximately 60°C for 1-2 hours.

CONTRIBUTION - SCHOOL WISE



Progress Made After Establishment of IPR Cell



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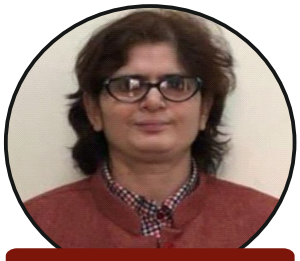

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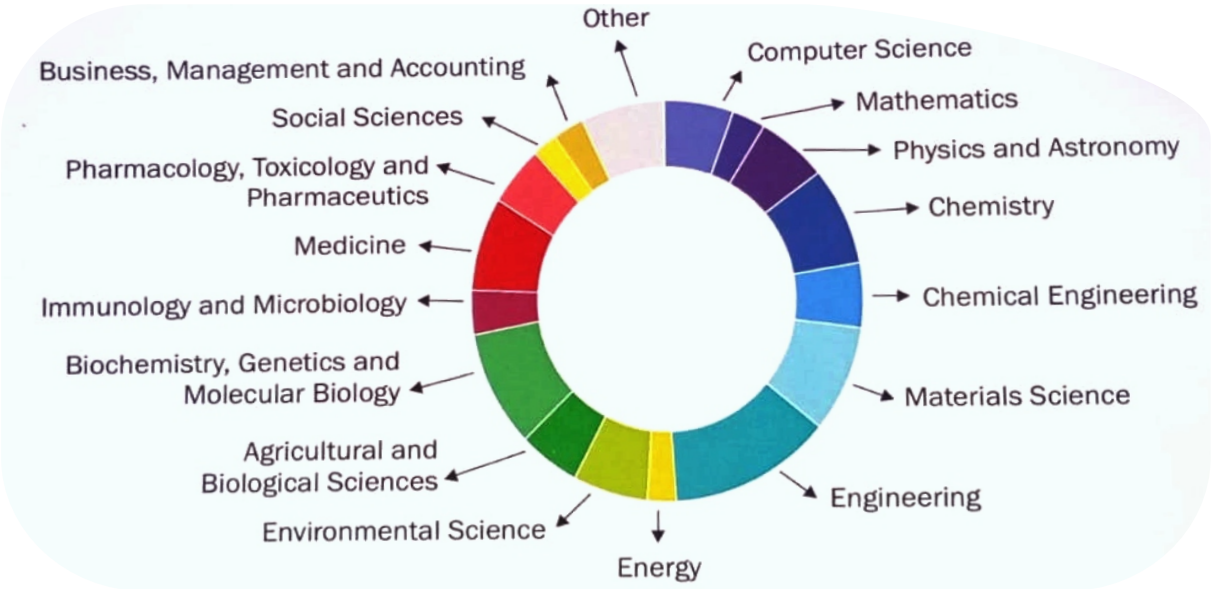

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