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List of Patents Published/ Awarded- Academic Year- 2024

S. No	Name of the Teacher	Patent Number	Title of the Patent
01	Dr. Laxmi Raman Adil, Mr. Sahdev, Ms. Lalita Sahu , Mr. Yugal Kishore Rajput, Mr. Ashwani Sahu, Mr. Rajendra Sahu	202421032920 A	Innovative Process for The Rapid Degradation of Plastics Using Engineered Bacterial Strains
02	Dr. P. Vishvnathan, Dr. Gokul Prasad, Dr. Ram Krishna, Deshmukh, Mr. Sunil Kumar Sahu, Ms. Ranu Verma	202421032923 A	Enhanced Animal Tracking Device With Environmental Adaptability
03	Dr. Gokul Prasad, Dr. P. Vishvnathan, Mr. Laxmikanth, Ms. Rekha Sahu, Mr. Hemant Pandey	202421032925 A	Automated Wildlife Monitoring System Using Ai-Based Image Recognition
04	Dr. Poonam Verma, Dr. Laxmi Raman Adil, Dr. N Kumar Swamy, Mr. Lukeshwar Kumar, Sahu, Mr. Rameshwar Nishad , Ms. Lalita Sahu	202421032927 A	Novel Antibiotic Compounds Derived From Marine Microorganisms for The Treatment of Multidrug-Resistant Bacterial Infections
05	Dr. N Kumar Swamy, Dr. Ram Krishna Deshmukh, Mr. Sunil Kumar Sahu, Ms. Rekha Sahu, Mr. Hemant Pandey, Ms. Ranu Verma,	202421032928 A	Nanostructured Alloy Compositions for Improved Superconductivity
06	Dr. Abha Mahalwar, Mr. Takeshwar Kaushik, Mr. Vagesh Kumar, Mr. Khemanshu Sahu, Mr. Dushyant Yadav,	202421032931 A	High-Density Server Cooling System Using Phase Change Materials



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	Mr. Sanjeev Jangde,		
07	Mr. Hemant Pandey Mr. Nukesh Kumar Sahu Ms. Himanshi Sahu Mr. Dameshwar Sahu Mr. Govinda Mr. Lukeshwar Kumar Sahu	202521032453 A	Optimized Machine Learning Algorithms for Real-Time Signal Processing In Smart Grid Systems And Business Management Implementation
08	Ms. Lalita Sahu	441959-001	Graphene Oxide Nano-Synthesis Machine



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(12) PATENT APPLICATION PUBLICATION

(21) Application No.202421032920 A

(19) INDIA

(22) Date of filing of Application: 25/04/2024

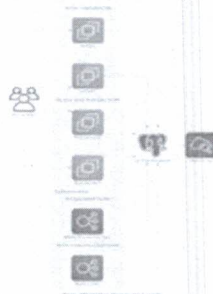
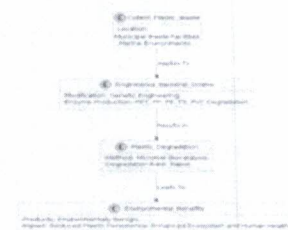
(43) Publication Date: 31/05/2024

(54) Title of the invention: INNOVATIVE PROCESS FOR THE RAPID DEGRADATION OF PLASTICS USING ENGINEERED BACTERIAL STRAINS

(51) International classification: C12N0001200000, C02F000340000, B09C0001100000, C02F0001720000, C09D0005160000
(86) International Application No: NA
(87) International Publication No: NA
(61) Patent of Addition to Application Number: NA
(62) Divisional to Application Number: NA
Filing Date: NA
Filing Date: NA

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(57) Abstract:
The rapid accumulation of plastic waste has emerged as a critical environmental challenge, necessitating innovative solutions for its efficient degradation and management. This patent application presents a novel approach utilizing engineered bacterial strains for the accelerated breakdown of plastics. Through genetic modification, these strains are empowered to produce enzymes capable of efficiently degrading various plastic polymers, including PET, PP, PE, PS, and PVC. By harnessing the power of microbial biocatalysis, the process offers rapid degradation rates, thereby reducing the long-term persistence of plastic waste in the environment. The method's versatility enables its application across diverse settings, from municipal waste treatment facilities to marine environments. Moreover, the environmentally benign degradation products generated through this process mitigate the negative impacts of plastic pollution on ecosystems and human health. Overall, this innovative process represents a significant advancement in sustainable waste management and environmental remediation, offering a promising solution to the global challenge of plastic pollution. Accompanied Drawing (FIGS. 1-2)



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



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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application : 25/04/2024

(21) Application No. 202421032923 A

(43) Publication Date : 31/05/2024

(54) Title of the invention: ENHANCED ANIMAL TRACKING DEVICE WITH ENVIRONMENTAL ADAPTABILITY

(51) International classification : G05D0001020000, A01K0029000000, A01K0005020000, G06N0005040000, A01G0025160000
(86) International Application No : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
(62) Divisional to Application Number : NA
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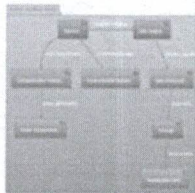
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(57) Abstract :

The present invention discloses an enhanced animal tracking device with environmental adaptability, designed to address the limitations of existing tracking technologies. By integrating advanced sensors, communication modules, and power management systems, the device offers improved accuracy, durability, and adaptability to diverse environmental conditions. This innovation holds significant potential for advancing the field of zoology and wildlife research by enabling more precise and comprehensive tracking of animal behavior across various habitats. Accompanied Drawing [FIGS. 1-2]



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



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(12) PATENT APPLICATION PUBLICATION

(21) Application No.202421032925 A

(19) INDIA

(22) Date of filing of Application :25/04/2024

(43) Publication Date : 31/05/2024

(54) Title of the invention : AUTOMATED WILDLIFE MONITORING SYSTEM USING AI-BASED IMAGE RECOGNITION

(51) International classification : H04N0007180000, G06Q0030020000, G06N0003040000, G06N0003080000, G06N0005040000

(86) International Application No : NA

Filing Date : NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number : NA

Filing Date : NA

(62) Divisional to Application Number : NA

Filing Date : NA

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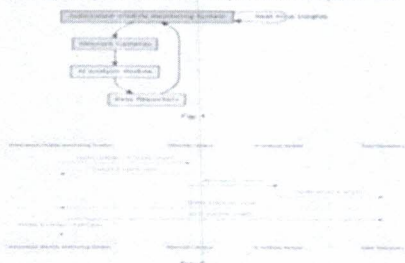
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(57) Abstract :

The Automated Wildlife Monitoring System (AWMS) described herein presents a novel approach to wildlife conservation through the integration of AI-based image recognition technology. By deploying a network of cameras equipped with motion sensors in target areas, the system captures images and videos of wildlife activities. These data are then analyzed in real-time using advanced AI algorithms trained to identify and classify various species, behaviors, and population trends. The AWMS offers several advantages, including increased efficiency, accuracy, and cost-effectiveness compared to traditional monitoring methods. With its ability to provide real-time monitoring capabilities and actionable insights, the AWMS has wide-ranging applications in conservation biology, environmental monitoring, and wildlife management. Overall, the AWMS represents a significant step forward in wildlife monitoring technology, empowering stakeholders with the tools needed to safeguard biodiversity and preserve natural ecosystems. Accompanied Drawing (FIGS. 1-2)



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



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(12) PATENT APPLICATION PUBLICATION

(21) Application No.202421032927 A

(19) INDIA

(22) Date of filing of Application : 25/04/2024

(43) Publication Date : 31/05/2024

(54) Title of the invention : NOVEL ANTIBIOTIC COMPOUNDS DERIVED FROM MARINE MICROORGANISMS FOR THE TREATMENT OF MULTIDRUG-RESISTANT BACTERIAL INFECTIONS

(51) International classification : A61P31/04, C07K1/14, C07K2/00,
C12N1/20, C12Q1/04
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to : NA
Application Number : NA
Filing Date : NA
(62) Divisional to Application : NA
Number : NA
Filing Date : NA

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4) Mr. Lukeshwar Kumar Sahu

5) Mr. Rameshwar Nishad

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(57) Abstract :

The present invention relates to the discovery and development of novel antibiotic compounds derived from marine microorganisms, offering a potent solution to the escalating global challenge of multidrug-resistant bacterial infections. These newly identified compounds are isolated from unique marine sources, such as deep-sea vents and coral reefs, and have been shown to possess strong antibacterial activity specifically targeting pathogens resistant to existing antibiotics. The chemical structures of these compounds are distinct and have been characterized through various spectroscopic methods, including nuclear magnetic resonance (NMR) and mass spectrometry (MS). The primary novelty lies in their mechanism of action which disrupts essential bacterial processes, thereby overcoming resistance mechanisms. This invention provides a promising therapeutic avenue for treating severe infections caused by bacteria such as Methicillin-resistant *Staphylococcus aureus* (MRSA), Vancomycin-resistant *Enterococci* (VRE), and Carbapenem-resistant *Klebsiella pneumoniae*. The application encompasses the compounds themselves, methods of their isolation and purification, and their use in pharmaceutical compositions for effective treatment of multidrug-resistant infections. Accompanied Drawing [FIGS. 1-2]



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



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(12) PATENT APPLICATION PUBLICATION

(21) Application No. 202421032928 A

(19) INDIA

(22) Date of filing of Application : 25/04/2024

(43) Publication Date : 31/05/2024

(54) Title of the invention : NANOSTRUCTURED ALLOY COMPOSITIONS FOR IMPROVED SUPERCONDUCTIVITY

(51) International classification : B82Y30/00, B82Y40/00
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
Filing Date : NA
(62) Divisional to Application Number : NA
Filing Date : NA

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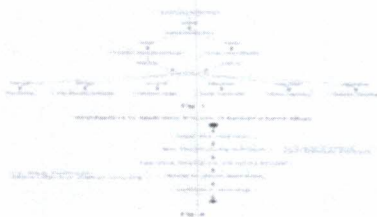
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(57) Abstract :

The present invention discloses novel nanostructured alloy compositions tasked to enhance superconductivity. By leveraging nanostructuring techniques and precise alloy formulations, these compositions exhibit superior critical temperatures and critical current densities compared to conventional superconductors. Through careful engineering at the nanoscale, the alloys demonstrate enhanced flux pinning, reduced grain boundary scattering, and increased coherence length, paving the way for advanced applications in energy transmission, medical diagnostics, and quantum computing. This innovation represents a significant leap forward in the field of superconductivity, offering promising solutions to longstanding challenges and opening new avenues for technological advancement. Accompanied Drawing [FIGS. 1-2]



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



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(12) PATENT APPLICATION PUBLICATION

(21) Application No.202421032931 A

(19) INDIA

(22) Date of filing of Application :25/04/2024

(43) Publication Date : 31/05/2024

(54) Title of the invention : HIGH-DENSITY SERVER COOLING SYSTEM USING PHASE CHANGE MATERIALS

(51) International classification :H05K0007200000, G06F0001200000, F28D0020020000,
G06F0012086600, C09K0005060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No :NA
(61) Patent of Addition to :NA
Application Number :NA
Filing Date :NA
(62) Divisional to Application :NA
Number :NA
Filing Date :NA

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(57) Abstract :

The present invention introduces a high-density server cooling system employing phase change materials (PCMs) to efficiently manage the heat generated by servers in data center environments. By leveraging the latent heat absorption properties of PCMs, the cooling system effectively mitigates the challenges posed by high-density server configurations. This innovative approach enhances hardware reliability, prolongs operational lifespan, and substantially reduces energy consumption and associated operating costs in data center cooling. The system's modular design offers scalability and adaptability to varying server densities, ensuring optimal performance under diverse operational conditions. Accompanied Drawing [FIGS. 1-2]



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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202521032453 A

(43) Publication Date : 18/04/2025

(54) Title of the invention : OPTIMIZED MACHINE LEARNING ALGORITHMS FOR REAL-TIME SIGNAL PROCESSING IN SMART GRID SYSTEMS AND BUSINESS MANAGEMENT IMPLEMENTATION

(51) International classification :G06N002000000, G16H0050200000, G06N0003080000,
G06N0003084000, G06N0007010000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No :NA
(61) Patent of Addition to :NA
Application Number :NA
Filing Date :NA
(62) Divisional to Application :NA
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(57) Abstract :

The present invention discloses an optimized machine learning framework for real-time signal processing, designed to enhance efficiency in smart grid systems and business management applications. The invention integrates advanced AI techniques, including deep learning, reinforcement learning, and federated learning, to enable intelligent decision-making, anomaly detection, predictive analytics, and automated optimization. A multi-layered architecture comprising a Data Acquisition and Preprocessing Module, Optimized Machine Learning Engine, and Decision Support Layer ensures seamless real-time adaptability. The system leverages quantized neural networks (QNNs) for low-power edge deployment, reinforcement learning for dynamic grid and business strategy optimization, and a privacy-preserving federated learning model for secure, decentralized training. The invention is applicable to various domains, including smart grid fault detection, financial risk assessment, and industrial predictive maintenance, providing superior scalability, computational efficiency, and self-learning capabilities.

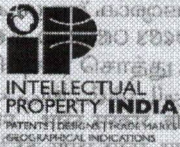
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ORIGINAL

क्रम सं/ Serial No. : 190714



पेटेंट कार्यालय, भारत सरकार

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डिजाइन के पंजीकरण का प्रमाण पत्र

Certificate of Registration of Design

डिजाइन सं. / Design No.

441959-001

तारीख / Date

25/12/2024

पारस्परिकता तारीख / Reciprocity Date*

देश / Country

प्रमाणित किया जाता है कि संलग्न प्रति, में वर्णित डिजाइन जो GRAPHENE OXIDE NANO-SYNTHESIS MACHINE से संबंधित है, का पंजीकरण, श्रेणी 24-01 में 1.Dr. Vikas Dadabhau Kadu 2. Dr. Vedpathak Mangesh Mohan 3.Rakesh Rupan Kumbhar 4.Ms Lalita Sahu 5.Dr. Vilas Shivshankar Balgaonkar के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-01 in respect of the application of such design to GRAPHENE OXIDE NANO-SYNTHESIS MACHINE in the name of 1.Dr. Vikas Dadabhau Kadu 2. Dr. Vedpathak Mangesh Mohan 3.Rakesh Rupan Kumbhar 4.Ms Lalita Sahu 5.Dr. Vilas Shivshankar Balgaonkar.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्याधीन प्रावधानों के अनुसरण में

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि : 27/01/2025
Date of Issue



उत्तराधिकारी

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