JEPPIAAR
ENGINEERING COLLEGE

(A CHRISTIAN MINORITY INSTITUTION)

JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI – 600119

Curricular Details

Faculty

AY – (2024-2025)

PRINCIPAL
JEPPIAAR ENGINEERING COLLEGE
JEPPIAAR NAGAR,
RAJIV GANDHI SALAI,
CHENNAI - 600119

Faculty Achievement Curricular

Academic Year* -select-	***2024-25***
Number of Research papers published in Journals*	**41**
Number of patents granted*	**23**
Number of papers published in National Conferences*	**01**
Number of papers published in International Conferences*	**26**
***Number of Books Authored **	**03**
Number of book chapters authored*	**10**
***Number of new externally funded research projects received **	**04**
Fund received during this academic year*	**Rs.1,25,000**

List of Journal Articles Published 2024-25

1. Arshiya Mobeen, M.; Safia Naveed, S. Quantum Generative Adversarial Networks (QGAN): A Comparative Analysis with Classical GANs for Synthetic Data Generation and Cybersecurity, Lecture Notes in Networks and Systems, 1387 LNNS, 2026, pp. 515-533, DOI: 10.1007/978-981-96-6060-5_38

2. Kannan, R.; Sathiyamoorthi, S.; Sampath, S.; Mukilarasan, M.; Dillikannan, D.; Jayabal, R. Optimization and synthesis process of biodiesel production from coconut oil using central composite rotatable design of response surface methodology, Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 239(6), 2025, pp. 3314-3324, DOI: 10.1177/09544089241230251

3. Subramanian, K.; Dillikannan, D.; Vasan, A.M.; Ashwin, R. Performance, emission, and neural network analysis of Simmondsia chinensis biodiesel as a sustainable fuel in a compression ignition engine: A multi-objective approach, Results in Engineering, 28, 2025, 107847, DOI: 10.1016/j.rineng.2025.107847

4. Abdul, Y.; Venkatesan, V.; Kukaram, G.; Boulaaras, S.; Alharbi, A. A dynamic image encryption scheme through 2-D cellular automata and chaotic logistic map, Scientific Reports, 15(1), 2025, 36116, DOI: 10.1038/s41598-025-21225-w

5. Anitha Gnanaselvi, J.; Kalpana, V.; Jaisharma, J.; Sridevi, R. Asymmetric lightweight cryptographic-based secure routing technique in IoT-based WSN via optimal path selection

using hybrid optimization algorithm, Knowledge-Based Systems, 330, 2025, 114720, DOI: 10.1016/j.knosys.2025.114720

6. Sudarshana, R.; Rajiv, A.; Balan, R.; Jagannathan, K.; Raj, F.R.M.S.; Sambasivam, R.; Prakash, M. Enhanced electrochemical performance of amorphous iron oxide/boron composite derived from α-Fe2O3 for supercapacitor applications, Ionics, 31(11), 2025, pp. 12141-12154, DOI: 10.1007/s11581-025-06705-3

7. Veeraraghavan, S.M.; Kaliyaperumal, G.; Sampath, S.; Jayabal, R.; Mukilarasan, M.; Manickaraj, P.; De Poures, M.V.; Dillikannan, D. Optimized injection strategy for hydrogen-waste transformer oil biodiesel dual-fuel engines: A novel waste-to-energy solution towards environmental protection, Process Safety and Environmental Protection, 202, 2025, 107749, DOI: 10.1016/j.psep.2025.107749

8. Murugapoopathi, S.; Manieniyan, V.; Rajaganapathy, C.; Sathiyamoorthi, S.; Thiruselvam, K.; Dillikannan, D. Energy, exergy and environmental assessments of rubber seed oil methyl ester-diesel blend for an agricultural diesel engine under the influence of exhaust gas recirculation, Environmental Progress and Sustainable Energy, 44(5), 2025, e70011, DOI: 10.1002/ep.70011

9. Balachandran, G.; Ranjith, S.; Jagan, G.C.; Chenthil, T.R. MAEL-FER: a multi-aspect enhancement learning framework for robust facial emotion recognition through integrated learning modules, International Journal of Machine Learning and Cybernetics, 16(9), 2025, pp. 5761-5792, DOI: 10.1007/s13042-025-02597-x

10. Yamini, S.; S, S.; Sivakami Sundari, M.; Senthilkumar, K. Synergistic enhancement of tribological performance and thermal stability in R-1234yf refrigeration systems using graphene oxide -silver hybrid nanolubricants, Case Studies in Thermal Engineering, 72, 2025, 106430, DOI: 10.1016/j.csite.2025.106430

11. Nanammal, V.; Rajalakshmi, S.; Remya, V.; Ranjith, S. ViTU-net: A hybrid deep learning model with patch-based LSB approach for medical image watermarking and authentication using a hybrid metaheuristic algorithm, Computers in Biology and Medicine, 194, 2025, 110393, DOI: 10.1016/j.compbiomed.2025.110393

12. Ponnuraj, V.; Thangavelu, S.; Kaliyamurthi, B. An area and power efficient VLSI architecture for epileptic seizure detection using Transpose Form Retimed Delayed LMS filter and spiking neural networks, Integration, 103, 2025, 102433, DOI: 10.1016/j.vlsi.2025.102433

13. Kumar, I.; Ramalingeswara Rao, S.R.; Dillibabu, S.P.; Reddy, K.S.; Reddy, P.N.; Alam, M.; Halder, S.; Kumar, H.A. Thermal performance enhancement of double pipe heat exchangers using SiO2 and ZnO nanoparticles in engine oil: An experimental study, AIP Conference Proceedings, 3267, 2025, 20302, DOI: 10.1063/5.0264786

14. Reddy, A.R.; Surakasi, R.; Shanmugam, S.; Nixon Samuel Vijayakumar, G.N.S.; Joshi, S.K.; Pandian, R.; Gulati, M.; Kumar, H.A. Impact of silicon nanoparticles on the mechanical properties of sisal/flax fiber-based polymer hybrid nanocomposites, AIP Conference Proceedings, 3267, 2025, 20304, DOI: 10.1063/5.0264785

15. Chenthil, T.R.; Jagan, G.C.; Ranjith, S.; Balachandran, G. Energy-efficient hierarchical dynamic depth adjustment routing protocol for UWSN with distributed sink mobility and semantic self-healing, Journal of Network and Computer Applications, 238, 2025, 104136, DOI: 10.1016/j.jnca.2025.104136

16. Jagan, G.C.; Remya, V.; Balachandran, G.; Ranjith, S. Trust-Based Multi-Objective Cluster Head Selection for Optimal and Secure Routing in Wireless Networks, International Journal of Communication Systems, 38(8), 2025, e70095, DOI: 10.1002/dac.70095

17. Kaliyamurthi, B.; Saravanan, N.; Vijaya Bhaskar, K.; Sivasankar, S. An Intelligent Recurrent Neural Network Driven Secured Routing Protocol for Vehicular Ad Hoc Networks, Knowledge-Based Systems, 317, 2025, 113371, DOI: 10.1016/j.knosys.2025.113371

18. Balachandran, G.; Ranjith, S.; Jagan, G.C.; T R, C. Advanced speech emotion recognition utilizing optimized equivariant quantum convolutional neural network for accurate emotional state classification, Knowledge-Based Systems, 316, 2025, 113414, DOI: 10.1016/j.knosys.2025.113414

19. Kannan, J.; Kaliyamurthi, B.; Vijaya Bhaskar, K.; Sivasankar, S. Sine Cosine–Reptile Search–Based CH Selection and Optimized Routing in WSN-Assisted IoT to Mitigate Hotspot Problem, International Journal of Communication Systems, 38(7), 2025, e70050, DOI: 10.1002/dac.70050

20. Meenachi, M.; Palanisamy, S.; Justin, L.; Rajendran, P. Biosynthesized Silver Nanoparticle–Infused Microcrystalline Cellulose Film for Antibacterial Food Packaging, ChemistrySelect, 10(16), 2025, e202501107, DOI: 10.1002/slct.202501107

21. Subramanian, K.; Paramasivam, S.A.; Dillikannan, D. Machine learning predictions on the output parameters of common rail direct injection engines fueled with ternary blend, Chemical Industry and Chemical Engineering Quarterly, 31(3), 2025, pp. 173-184, DOI: 10.2298/CICEQ240303025S

22. Arathi, S.; Samji, A.; Eashwarlal, K.; Gokulkrishnan, S.; Muthubhavani, M.; Yasini, N.P.; Uma Maheswari, G.; Warrier, R.R. Transcriptome sequencing on different ages of Saraca asoca bark: Insights from tannin biosynthetic pathways and EST-SSR marker design, Fitoterapia, 182, 2025, 106459, DOI: 10.1016/j.fitote.2025.106459

23. Dhamodharan, A.; Murugan, E.; Pang, H.; Kaliyappan, K.; Jhansirani, K.; Gao, Y. Facile fabrication of CdS@GO binary nanocomposite coated GCE for separate and parallel electrochemical sensing of ascorbic acid, uric acid and nitrite, Carbon Letters, 35(2), 2025, pp. 881-893, DOI: 10.1007/s42823-024-00838-7

24. G, M.; Tamilkolundhu, S.; Josephraj, F.X.; Ramasamy, R. Influence of CMT welding parameters on microstructural and properties investigation of dissimilar weld joint for aluminum bronze and carbon steel, Materials Science and Technology, 41(6), 2025, pp. 432-442, DOI: 10.1177/02670836241261464

25. Zareena, S.J.; Catherine, S.; Gupta, N.; Gopi, E.; Swadhi, R. Enhancing patient engagement and outcomes through digital transformation: Machine learning in medical marketing, 2025, pp. 285-312, DOI: 10.4018/979-8-3693-9783-1.ch011

26. Vanitha, A.; Vimalnath, V.; Gupta, B.; Golda, J.; Benita, M.J.; Vettriselvan, R. Mastering mobile marketing in healthcare: Effective strategies and best practices, 2025, pp. 341-364, DOI: 10.4018/979-8-3693-9783-1.ch013

27. Sathiyamoorthi, S.; Sampath, S.; Thiruselvam, K.; Murugapoopathi, S.; Dillikannan, D. Comprehensive assessment of energy, exergy, and environmental impacts of lemongrass oil-diesel blend with dimethyl and diethyl ethers in agricultural diesel engines, Chemical Engineering and Processing - Process Intensification, 209, 2025, 110187, DOI: 10.1016/j.cep.2025.110187

28. Meenakshi, B. Deep Q-Network-Powered Optimization of Urban Public Transit for Sustainable Mobility and Efficiency, 2025, pp. 1214-1219, DOI: 10.1109/ICSCSA66339.2025.11171157

29. Devi Krishna, R.B.; Agarwal, P.; Junieus, E.R.; Krishnamurthy, N.; Murali, S.; Kamesh, J.S.; Francis, F. Decoding Ovarian Cancer: Exploring The Impact Of LRP1 And MMP14 Gene

Variations, Journal of Applied Bioanalysis, 11(4), 2025, pp. 363-371, DOI: 10.53555/jab.v11i4.372

30. Monisha, T.; Kalarani, S. Development of a CNN Model for Anomaly Detection in SDN Environments, 2025, pp. 649-655, DOI: 10.1109/ICISS63372.2025.11076439

31. Sankar, M.A.; Balachandran, G.; Ramesh, S.; Bhavani, R.; Raddy, U.; Masih, R.K. Advanced Machine Learning Techniques Driving Innovation in Healthcare Systems and Personalized Medicine, 2025, pp. 73-94, DOI: 10.4018/979-8-3373-1022-0.ch004

32. Ramesh, S.; Jagan, G.C.; Rasheedha, A.; Remya, V.; Bhavani, R.; Rajaram, A.; Ibraheem, N.A. Harnessing Predictive Analytics for Proactive Healthcare and Improved Patient Outcomes, 2025, pp. 95-110, DOI: 10.4018/979-8-3373-1022-0.ch005

33. Challagidad, P.S.; Chenthil, T.R.; Manickam, M.; Sungeetha, D.; Arunsundar, B.; Masih, R.K. Leveraging Blockchain Technology for Secure and Transparent Medical Data Exchange, 2025, pp. 225-242, DOI: 10.4018/979-8-3373-1022-0.ch012

34. Mahesh Kumar, N.M.; Benni, N.S.; Deepak, G.; Chenthil, T.R.; Ramesh, S.; Rajaram, A.; Khan, M.A. The Role of Personalized Medicine and Internet of Things in Shaping Precision Healthcare, 2025, pp. 127-142, DOI: 10.4018/979-8-3373-1022-0.ch007

35. Arunsundar, B.; Benni, N.S.; Challagidad, P.S.; Ranjith, S.; Prabakar, D.; Kumar, C.R. Ensuring Security and Privacy in Internet of Things-Enabled Healthcare Ecosystems, 2025, pp. 207-224, DOI: 10.4018/979-8-3373-1022-0.ch011

36. Asuti, M.G.; Ramesh, S.; Prabakar, D.; Balachandran, G.; Anuja, T.; Rajaram, A.; Jabbar, H.K. Innovative Approaches to Remote Health Monitoring Systems for Enhanced Patient Care and Accessibility, 2025, pp. 111-126, DOI: 10.4018/979-8-3373-1022-0.ch006

37. Akila, V.; Evangelin M, R.; Prabhu, G.; Akila, R.; Swadhi, R. Performance Metrics in Blockchain- Enabled AIML for Cognitive IoT in Large- Scale Networks: Optimizing Data Analytics for Enhanced Network Performance, 2025, pp. 265-287, DOI: 10.4018/979-8-3693-6552-6.ch0012

38. S, M.; Sridhar, S. Near field features of orthogonally impinging under expanded triangular and hexagonal supersonic jets, Acta Astronautica, 228, 2025, pp. 204-223, DOI: 10.1016/j.actaastro.2024.11.054

39. A, D.; K, J.; Kaliyappan, K.; Gao, Y.; Pang, H. Room temperature analysis of vanillin and folic acid in food samples using a BiOBr/GCE sensor: An empathetic and efficient approach, Materials Science in Semiconductor Processing, 187, 2025, 109161, DOI: 10.1016/j.mssp.2024.109161

40. Muthulakshmi, A.; Venkata Siva Prasad, C.H.; Balachandran, G.; Ranjith, S. Optimized Global Aware Siamese Network based Monkeypox disease classification using skin images, Biomedical Signal Processing and Control, 101, 2025, 107125, DOI: 10.1016/j.bspc.2024.107125

41. Chenthil, T.R.; Balachandran, G.; Ranjith, S.; Sakthivel, E. A Quantum-Inspired Source-Distributed Opportunistic Routing Protocol for Reliable Routing in Underwater Wireless Sensor Networks, Concurrency and Computation: Practice and Experience, 37(2), 2025, e8330, DOI: 10.1002/cpe.8330

42. Balachandran, G.; Ranjith, S.; Chenthil, T.R.; Jagan, G.C. Facial expression-based emotion recognition across diverse age groups: a multi-scale vision transformer with contrastive learning approach, Journal of Combinatorial Optimization, 49(1), 2025, 11, DOI: 10.1007/s10878-024-01241-8

43. Dhamodharan, A.; Murugan, E.; Li, H.; Zheng, X.; Gao, Y.; Guan, T.; Rao, S.; Pang, H.; Kaliyappan, K. Hexagonal Morphology Nickel Sulfide Anchored on Graphene Oxide–Modified Glassy Carbon Electrode for the Sensitive Detection of Paracetamol in Biological Samples, Electrocatalysis, 16(1), 2025, pp. 182-195, DOI: 10.1007/s12678-024-00909-3

44. Muruganandam, S.; Joseph, L.; Renjit, J.A.; Roshan Prakash, S.; Rohit, M.; Santhosh Kumar, C. Enhancing Network Security with Deep Learning Based Intrusion Detection Systems, 2025, DOI: 10.1109/ICCDS64403.2025.11209656

45. Deepika, N.; Lavanya, V.; Vigneshwari, M.; Jenifer, M.J.; Priya Kalaivani, K.; Vijayalakshmi, R. Emotion-Aware Voice Response System using GROQ, 2025, pp. 1225-1230, DOI: 10.1109/ICIMIA67127.2025.

46. • Subramanian, K.; Sathiyagnanam, A.P.; Dillikannan, D.; Sekar, S.D. Optimizing Thermal Efficiency in Diesel Engines: Predicting Performance with Ternary Blends, Variable Injection Pressures and EGR Using LSTM Machine Learning, Isi Bilimi Ve Teknigi Dergisi/ Journal of Thermal Science and Technology, 45(2), 2025, pp. 272-284, DOI: 10.47480/isibted.1642863
47. • Sivakumar, V.G.; Raj Sankara Vadivel, S.; Titus, A.; Krishnaswamy, R.; Pratap Singh Yadav, J.K. [Details missing], 2025
48. • Aakash, M.; Gunasundari, C.; Athithan, S.; Santhosh Kumar, G.S.; Meetei, M.Z.; Orsud, M.A. Modelling Air Pollution Dynamics and Mitigation Strategies: A Mathematical Approach, Contemporary Mathematics (Singapore), 6(3), 2025, pp. 3454-3471, DOI: 10.37256/cm.6320256149
49. • Kumar, P.S.; Vijayakumar, B.; Kiruthika, R.; Titus, S.; Parmar, K.; Rajaram, A.; Philip, J.M.; Prasad, A.R.; Khan, A.; Ananthan, A.S. Development of Non-Toxic Catalysts for Green Chemistry Applications in Wastewater Treatment, Oxidation Communications, 48(1), 2025, pp. 1-11
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51. • Jayanth, B.V.; De Poures, M.V.; Kaliyaperumal, G.; Dillikannan, D.; Jawahar, D.; Kumaran, K.; Shivappa, G.P.M. A comprehensive study on the effects of multiple injection strategies and exhaust gas recirculation on diesel engine characteristics that utilize waste high density polyethylene oil, Energy Sources, Part A: Recovery, Utilization and Environmental Effects, 47(1), 2025, pp. 7749-7766, DOI: 10.1080/15567036.2021.1924313

JEPPIAAR
ENGINEERING COLLEGE

2025 & 2024 PATENT GRANTED DETAILS

S.No.	Design No.	Date of registration	Name of the Faculty	Title of the Registered Patent
1	451256-001	12/03/2025	Ms. K.Priyadharshini, Ms. Priyakalaivani, Dr.J.Paul Chandra Kumar, Dr.T.R Chenthil, Ms. S.Saranya, Ms.M.Vinothini	AI Enabled Device For Detection Of Neurological Disorders
2	451863-001	18/03/2025	Dr.G.Balachandran, Dr.T.R Chenthil, Dr.G.C.Jagan, Mr.J.Ranjithkumar, Mr.E.Sakthivel, Dr.S.Ranjith	AI Based Automated Language Translator

2025 & 2024 PUBLISHED PATENT DETAILS

S.No	Patent No.	Date of Publication	Name of the faculty	Department	Title of the patent
1	202541088554	17/10/2025	Dr.D.Damodharan	Mechanical	Multipurpose Stand For Iron Box
2	202541083616	26/09/2025	Dr.N.Moulieswaran	S&H	A System And A Method To Perform Psychoanalytic Analysis Of Character Development In Modern Literature Using Natural Language Processing
3	202541070877	01/08/2025	Dr.K.Subashini	S&H	Mathematical Algorithm Based Wearable Health Monitoring System Using Embedded Biomedical Neural Network Sensors
4	202541048291	06/06/2025	Dr.S.Titus	S&H	High-Efficiency Catalyst System And Method For Carbon Dioxide Conversion Into Fuels

5	202541036781	09/05/2025	Mrs.A.Sajitha	ECE	Structural Analysis On Mechanical Electric Scooter With An Aerodynamic Design And Dynamic Rotor Mechanism Powered By Artificial Intelligence
6	202541033918	25/04/2025	Dr.K.Subashini	S&H	Mathematical Optimization Of Ai-Guided Simulation Therapy
7	202541028321	25/04/2025	Dr.Aakash Mohandoss	S&H	On Semistar Pre Star Closed Set in Topological Spaces
8	202541021271	21/03/2025	Dr.J.Paul Chandra Kumar	Mechanical	Experimental Study on the Mechanical and Thermal Properties of Basalt Fiber and Nanoclay Reinforced Polymer
9	202541020657	21/03/2025	Mr.A.Subash Chandar	CSE	AI-Powered Image Segmentation And Cancer Classification With Concrete Foundation-Based Environmental Science
10	202541013612	28/02/2025	Mrs.C.Anitha	ECE	Modeling, Optimization and Simulation of Information Flow Balancing between IoT and Fog Computing
11	202541002036	17/01/2025	Ms.K.Nansy	ECE	Seamless Energy Management In Python-Controlled Hybrid Wind-Solar Power System
12	202441104792	17/01/2025	Ms.K.Priya Kalaivani	AI&DS	An Intelligent Framework For Deep Learning-Based Water Demand Prediction In Smart Water Distribution System
13	202441088827	22/11/2024	Dr.A.Thiripuram	S&H	Integrating Analytical and Numerical Approaches for Linear System Solutions

14	202441081241	01/11/2024	Ms. M. Arshiya Mobeen	CSE	Smart Infrastructure Monitoring System using IoT Sensors and AI-powered Predictive Maintenance
15	202431076450	18/10/2024	Dr. E Gopi	MBA	The Influencer Marketing Effect On Generation Z's Product Buying Behavior
16	202411071439	11/10/2024	Dr. T R. Chenthil	ECE	A Hybrid Ai And Machine Learning Approach For Accurate Skin Cancer Detection And Classification
17	202441067548	13/09/2024	Ms.Josephine Mary Juliana Michael Benno	ECE	Securing Space Tourism Operations Using Blockchain Technology
18	202441062454	30/08/2024	Mr.J.Ranjith Kumar & Ms.Josephine Mary Juliana Michael Benno	ECE	3d Modelling And Printing In Smart Transportation By Deep Learning For Agriculture
19	202441057056	02/08/2024	Ms. Bhagyalakshmi T & Ms. Monisha T	IT & CSE	A Proposal For Using Neural Networks In The Creation Of Didactic Sequences Based On The Scorm Standard
20	202441055601	02/08/2024	Dr.J.Paul Chandra Kumar	Mechanical	An Experimental Investigation On Influence Of Filler Material On Damping Properties Of Hybrid Composites
21	202431054736	26/07/2024	Dr.R.Akila	MBA	AI-Powered Sentiment Analysis For Effective Social Media Monitoring
22	202441045297	21/06/2024	Ms.K.Priyadharshini	CSE	Real-Time Cloud-Driven Machine Learning For Dynamic Icu Ventilator Management
23	202421039076	21/06/2024	Dr.A.Midhun Kumar	IT	Smart Irrigation For House Potted Plants
24	202441015768	15/03/2024	Dr.J.Paul Chandra Kumar	Mechanical	Development of Low-Cost Osmotic Power Generation Setup

25	202441015530	22/03/2024	Dr.A.Midhun Kumar	IT	Vehicle-To-Grid Integration: Advanced Energy Management System For Electric Vehicles Using Deep Learning
26	202441009710	08/03/2024	Dr.A.Midhun Kumar	IT	Artificial Intelligence-Based News Quick Report Generation Method And Device
27	202441005427	09/02/2024	Dr. M. Merlin & Dr. S.R. Thilagavathy	S&H	Nanostructured Catalysts For Green Synthesis Of Pharmaceutical Intermediates
28	202441001281	09/02/2024	Dr.E.Gopi	MBA	Accounting And Analytical Model For The Risk Management Of The Economic Security Of The Poultry Enterpris

GRANTED PATENTS PROOF'S

INTELLECTUAL PROPERTY INDIA

ORIGINAL

क्रम सं/ Serial No. : 301646

पेटेंट कार्यालय, भारत सरकार — The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No : 451256-001

तारीख / Date : 12/03/2025

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *AI ENABLED DEVICE FOR DETECTION OF NEUROLOGICAL DISORDERS* से संबंधित है, का पंजीकरण, वर्ग 24-01 में 1.Mrs. Priyadharshini Kulandaivelu 2. Ms. Priya Kalaivani Krishnan 3.Dr. Paul Chandra Kumar 4.Dr. Thapasimuthu Rajeswari Chenthil 5.Mrs. Saranya Suriyaprakasam 6.Ms. Vinothini Miniyamuthu 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 *AI ENABLED DEVICE FOR DETECTION OF NEUROLOGICAL DISORDERS* in the name of 1.Mrs. Priyadharshini Kulandaivelu 2. Ms. Priya Kalaivani Krishnan 3.Dr. Paul Chandra Kumar 4.Dr. Thapasimuthu Rajeswari Chenthil 5.Mrs. Saranya Suriyaprakasam 6.Ms. Vinothini Miniyamuthu.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रबंधनों 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 Date of Issue : 03/06/2025

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का संरक्षणीयता की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के नियमों के अधीन, पाँच वर्षों की अतिरिक्त अवधि के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्यवाहियों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।

The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.

ORIGINAL

क्रम सं/ Serial No. : 200839

पेटेंट कार्यालय, भारत सरकार The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 451863-001

तारीख / Date : 18/03/2025

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *AI BASED AUTOMATED LANGUAGE TRANSLATOR* से संबंधित है, का पंजीकरण, श्रेणी 14-02 में 1.Dr. Gandeeban Bala Chandran 2. Dr. Thapasimuthu Rajeswari Chenthil 3.Dr. Gopinathan Chandramathi Jagan 4.Mr. JayaPrakash Ranjith Kumar 5.Mr. Sakthivel Ezhilarasu 6.Dr. Ranjith Subramanian 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 14-02 in respect of the application of such design to *AI BASED AUTOMATED LANGUAGE TRANSLATOR* in the name of 1.Dr. Gandeeban Bala Chandran 2. Dr. Thapasimuthu Rajeswari Chenthil 3.Dr. Gopinathan Chandramathi Jagan 4.Mr. JayaPrakash Ranjith Kumar 5.Mr. Sakthivel Ezhilarasu 6.Dr. Ranjith Subramanian.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन 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 / Date of Issue : 03/06/2025

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
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*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम: डिजाइन का स्वामित्व पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के नियमों के अधीन, पाँच वर्षों की अतिरिक्त अवधि के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्यवाहियों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।

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PUBLISHED PATENTS PROOF'S

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :17/09/2025

(21) Application No.202541088554 A

(43) Publication Date : 17/10/2025

(54) Title of the invention : MULTIPURPOSE STAND FOR IRON BOX

(51) International classification	:C09D007610000, C08J009140000, C09D016300000, C09F005000000, C10B017102000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an ironing stand (100) designed to support a hot iron box. The stand comprises a Support Ring (101), four vertical stands (102), four stand heads (103), and cross links (104). The support ring and cross links, along with the vertical stands, are constructed from stainless steel owing to its relatively low thermal conductivity and structural strength. The stand heads (103), which come into direct contact with the iron box, are made of ceramic material due to its excellent thermal insulation properties, thereby preventing heat transfer to the underlying surface. This design ensures safety, stability, and thermal isolation during and after ironing operations.

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

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/09/2025

(21) Application No.202541083616 A

(43) Publication Date : 26/09/2025

(54) Title of the invention : A SYSTEM AND A METHOD TO PERFORM PSYCHOANALYTIC ANALYSIS OF CHARACTER DEVELOPMENT IN MODERN LITERATURE USING NATURAL LANGUAGE PROCESSING

(51) International classification :G06F9016360000, G06F0040300000, G06F0016150000, G06N0005045000, G06N0020000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A SYSTEM AND A METHOD TO PERFORM PSYCHOANALYTIC ANALYSIS OF CHARACTER DEVELOPMENT IN MODERN LITERATURE USING NATURAL LANGUAGE PROCESSING The present disclosure relates to a system and a method to perform psychoanalytic analysis of character development in modern literature using Natural Language Processing (NLP). The system comprises a processor, a memory, and a plurality of modules including a narrative ingestion module, a narrative event segmentation module, a latent psychoanalytic embedding engine, a dynamic character psycho-trajectory generator, a cross-textual comparative analytics module, a knowledge graph integration module, and an explainable AI layer. The method enables extraction and preprocessing of narrative text, segmentation into psychoanalytically significant events, generation of embeddings representing unconscious and conscious states, and construction of psycho-trajectories for characters. The system further compares trajectories across different works, integrates cultural and archetypal mappings through knowledge graphs, and provides interpretable outputs with evidence-linked justifications. The disclosure offers a concrete technical effect by delivering structured, explainable, and scalable psychoanalytic insights, thereby overcoming the limitations of conventional sentiment-based or thematic literary analysis systems.

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

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/07/2025

(21) Application No.202541070877 A

(43) Publication Date : 01/08/2025

(54) Title of the invention : MATHEMATICAL ALGORITHM BASED WEARABLE HEALTH MONITORING SYSTEM USING EMBEDDED BIOMEDICAL NEURAL NETWORK SENSORS

(51) International classification :A61B0005000000, A61B0005(20500, G16H0050300000, G16H0050200000, G16H0040670000

(86) International Application No :NA :NA

Filing Date

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA :NA

Filing Date

(62) Divisional to Application Number :NA :NA

Filing Date

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(57) Abstract :

Abstract- This paper presents a next-generation wearable health monitoring system that integrates mathematical algorithms with embedded biomedical neural network sensors to enable intelligent, real-time healthcare diagnostics. The system is designed to continuously monitor multiple physiological parameters such as heart rate, ECG, oxygen saturation (SpO_2), temperature, and respiration using compact, low-power wearable sensors. At its heart is a compact embedded neural network carrying out on-device inference, minimizing the need for cloud computing and providing quicker, privacy-protecting health analytics. Advanced mathematical models-including, but not limited to, the usage of wavelet-based signal processing and nonlinear predictive algorithms-will be used to refine the interpretation of data results and aid in the identification of anomalies. The fuzzy logic-based decision-making engine makes possible the evaluation of even the most complex health conditions while providing realtime alerts with context-aware risk scoring. This framework adapts over time based on the user's health profile, providing insights into their needs through continuous learning. Unlike conventional systems demanding heavy hardware or potentially cloud-based computation, this architecture may be easily adaptable to self-learn dynamics responding to the patterns found in diversified populations-especially the elderly, patients with chronic conditions, or remote location inhabitants. Moreover, combining multi-sensor data with embedded AI increases the accuracy of diagnosis and reduces false positives with relevant unnecessary interventions. The solution proposed is a valuable step towards preventative healthcare based on proactive wearables. It enables the individual with permanent awareness of their health while assisting healthcare professionals with precise and real-time data, leading to better outcomes and minimizing the load on healthcare facilities. QBFICE.

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

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application : 19/05/2025

(21) Application No.202541048291 A
(43) Publication Date : 06/06/2025

(54) Title of the invention : HIGH-EFFICIENCY CATALYST SYSTEM AND METHOD FOR CARBON DIOXIDE CONVERSION INTO FUELS

(51) International classification : B01J0035300000, C12N0001200000, F25B0009000000, B01J0019120000, C25B0001040000
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
Filing Date : NA
(62) Divisional to Application Number : NA
Filing Date : NA

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(57) Abstract :
[055] The present invention relates to a novel high-efficiency catalyst system for the conversion of carbon dioxide (CO_2) into hydrocarbon-based fuels such as methanol, methane, and ethanol. The catalyst comprises transition metal nanoparticles doped with rare earth elements and uniformly dispersed on a porous carbon-nitrogen (C–N) framework, providing enhanced surface area, catalytic activity, and stability. This system is operable under both thermal and electrochemical conditions, enabling high CO_2 conversion efficiency and product selectivity at relatively mild temperatures and pressures. The invention offers a scalable and environmentally sustainable solution for carbon recycling and fuel generation, with potential applications in green energy, carbon capture and utilization (CCU), and renewable chemical production systems. Accompanied Drawing [FIGS. 1-2]

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

(12) PATENT APPLICATION PUBLICATION
(21) Application No. [illegible] A
(19) INDIA
(22) Date of filing of Application : [illegible]
(43) Publication Date : 09/05/2025

(54) Title of the invention : Structural Analysis on Mechanical Electric Scooter with an Aerodynamic design and dynamic rotor mechanism powered by Artificial Intelligence

(51) International classification	:[illegible]
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
In this paper, a detailed structural analysis of a mechanically electric scooter with aerodynamic shape and dynamic rotor mechanism driven by artificial intelligence (AI) is discussed. This research work aims at assessing the structural integrity, weight optimization, and performance efficiency of the chassis and rotor assembly of the scooter under different loading conditions. With the application of finite element analysis (FEA) and computational fluid dynamics (CFD), we evaluate the effect of aerodynamics on stability and energy efficiency. Furthermore, the incorporation of AI facilitates real-time modifications in rotor dynamics to enhance torque distribution, speed control, and adaptive control mechanisms. The results advance the design of lightweight, high-performance scooters for urban transportation, with focus on sustainability, efficiency, and safety.

No. of Pages : [illegible] No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033918 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MATHEMATICAL OPTIMIZATION OF AI-GUIDED SIMULATION THERAPY

(51) International classification :G06N0003046000, G16H0050200000, G16H0050300000, G16H0020100000, G16H0010600000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract: AI-driven simulation therapy (AIGST) combines artificial intelligence and computational models to improve treatment interventions in areas like psychology, rehabilitation, and precision medicine. This research examines mathematical ' optimization methods to enhance AIGST through improved model precision, lower computational expense, and optimized patient-specific treatment plans. We utilize convex and non-convex optimization, reinforcement learning, and multi-objective optimization to adapt simulations dynamically. The suggested framework promotes flexibility, efficiency, and accuracy in therapy to guarantee data-driven, patient centric results. Our results show that mathematical optimization notably enhances treatment efficacy, opening doors to more smart and responsive therapeutic simulations.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028321 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : On Semistar Pre Star Closed Set in Topological Spaces

(51) International classification : G06F0017100000, G16B0005000000, G06T0017300000, H04W0016000000, C03C0003000000
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
Filing Date : NA
(62) Divisional to Application Number : NA
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(57) Abstract :
The proposed invention introduces the concept of Semistar Pre Star Closed Sets in Topological Spaces, extending classical notions of closed sets by relaxing closure conditions to capture partial topological properties. This innovation provides a flexible framework for analyzing continuity, convergence, and separation, addressing the limitations of traditional closed sets in non-regular and non-Hausdorff spaces. By generalizing closure properties, semistar pre star closed sets offer a deeper understanding of how subsets interact with boundary and limit points under weaker closure operators. This approach refines the classification of points and subsets, aiding in the study of generalized continuity, limit behavior, and separation axioms. The invention is applicable to various fields, including functional analysis, algebraic topology, and dynamical systems, where understanding partial closure is critical. By broadening the scope of topological analysis, this invention contributes to the development of advanced mathematical theory and its interdisciplinary applications.

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

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :10/03/2025

(21) Application No.202541021271 A

(43) Publication Date : 21/03/2025

(54) Title of the invention : Experimental Study on the Mechanical and Thermal Properties of Basalt Fiber and Nanoclay Reinforced Polymer

(51) International classification : C08J 5/04, B82Y 33/00, C08L 101/16, C08K 3/34
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
Filing Date : NA
(62) Divisional to Application Number : NA
Filing Date : NA

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(57) Abstract :
This experimental study investigates the mechanical and thermal properties of basalt fiber and nanoclay reinforced polymer composites, with a focus on their potential for industrial applications. The primary objective of this work is to develop a composite material that combines the inherent benefits of basalt fiber and nanoclay to enhance the performance of polymers in various engineering fields. Basalt fibers, derived from volcanic rock, are known for their excellent mechanical strength, thermal resistance, and environmental sustainability. Nanoclay, on the other hand, is a nanomaterial that can improve the properties of polymers due to its high surface area and exceptional interaction with the matrix. In this study, basalt fibers of varying lengths and nanoclay concentrations were incorporated into a polymer matrix, and the composite samples were fabricated using a standard molding process. The mechanical properties, including tensile strength, flexural strength, and impact resistance, were evaluated using ASTM standard test methods. The thermal behavior of the composites was assessed using differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA), which provided insight into the material's heat resistance, thermal stability, and degradation patterns. The results showed significant improvements in both mechanical and thermal properties of the polymer matrix upon the incorporation of basalt fiber and nanoclay. The tensile strength and impact resistance of the composite material increased by a notable margin, while the thermal stability and degradation temperature were enhanced compared to the pure polymer. The findings suggest that basalt fiber and nanoclay reinforced polymer composites hold significant promise for applications in industries such as automotive, aerospace, and construction, where high-performance materials are crucial. This innovation could lead to the development of eco-friendly, cost-effective composite materials with superior mechanical and thermal properties, offering substantial advantages in both product performance and environmental sustainability. A utility patent for this composite material is proposed based on these novel findings.

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

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/03/2025

(21) Application No.202541028657 A

(43) Publication Date : 21/03/2025

(54) Title of the invention : AI-POWERED IMAGE SEGMENTATION AND CANCER CLASSIFICATION WITH CONCRETE FOUNDATION-BASED ENVIRONMENTAL SCIENCE

(51) International classification : G16H0030340000, G06N0020000000, G06T0007110000, G16H0030400000, G16H0050200000

(86) International Application No : NA
Filing Date : NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number : NA
Filing Date : NA

(62) Divisional to Application Number : NA
Filing Date : NA

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(57) Abstract :
Artificial Intelligence (AI)-based image segmentation and cancer classification have transformed medical diagnostics through improved accuracy and efficiency in the detection of diseases. This research investigates the integration of AI-based image processing methods with solid foundation-based environmental science to create a new method for cancer detection and analysis. Deep learning algorithms, such as convolutional neural networks (CNNs) and transformer-based models, are utilized to segment medical images and classify cancer tissues with high accuracy. In addition, this study examines the environmental implications of concrete foundations in healthcare infrastructure, evaluating their sustainability and ability to support AI-based medical applications. The interaction between AI-based medical imaging and environmental science is intended to maximize resource efficiency while promoting environmentally friendly advances in healthcare technology. Experimental findings show enhanced segmentation accuracy, stable classification performance, and possible sustainability advantages in AI-based diagnostics. This multi-disciplinary initiative brings medical AI breakthroughs to environmental awareness and creates a technologically advanced yet sustainable healthcare system.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application: 17/02/2025

(21) Application No.202541013612 A
(43) Publication Date : 28/02/2025

(54) Title of the invention : Modeling, Optimization and Simulation of Information Flow Balancing between IoT and Fog Computing

(51) International classification: H04L0067120000, G06F0009500000, H04W0004700000, G06F0021320000, H04L0067080000
(86) International Application No: NA
Filing Date: NA
(87) International Publication No: NA
(61) Patent of Addition to Application Number: NA
Filing Date: NA
(62) Divisional to Application Number: NA
Filing Date: NA

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(57) Abstract :
FOG computing is an alternative to meet the latency and processing demands of the Internet of Things (IoT). However, even with the necessary processing capacity, the addressing of information plays a fundamental role in ensuring maximum use of FOG computing while ensuring minimum traffic on the links. A mathematical model is proposed for load balancing of IoT devices to FOG using GAMS and a custom simulator made in Python to check the behavior of the optimized architecture over time. Significantly less information loss was achieved by using the addressing obtained with GAMS compared to equal and random distribution. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5] [FIG. 6] [FIG. 7] [FIG. 8][FIG.9] [FIG. 10] [FIG. 11] [FIG. 12][FIG. 13] [FIG. 14 [FIG. 15] [FIG. 16][FIG. 17] [FIG. 18] [FIG. 19] [FIG. 20] [FIG. 21]

No. of Pages : 29 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :[illegible]

(21) Application No.[illegible] A

(43) Publication Date : 17/01/2025

(54) Title of the invention : SEAMLESS ENERGY MANAGEMENT IN PYTHON-CONTROLLED HYBRID WIND-SOLAR POWER SYSTEM

(51) International classification	[illegible]
(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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6)Raja E
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(57) Abstract :
Seamless Energy Management in Python- Controlled Hybrid Wind-Solar Power System Abstract: The increasing demand for renewable energy and the urgent need for efficient energy management systems have driven the development of hybrid power systems. The following paper presents an innovative control approach of a hybrid wind-solar power system using Python. The system k integrates the operation of wind turbines and solar panels with a control algorithm based on Python. It dynamically manages energy resources for optimal efficiency and reliability in generation, storage, and distribution. The control system utilizes real-time data acquisition from weather sensors, energy consumption monitors, and storage units, making it adaptive in decision-making. Python's vast libraries and computational capabilities make it suitable for advanced forecasting of energy generation and consumption trends through the use of machine learning models. The system utilizes intelligent energy storage using batteries that ensure a constant power supply during fluctuating renewable generation. Key innovations include: Intelligent load distribution: real-time and direct distribution of energy both for critical and noncritical load that prevents wastage; Predictive Maintenance: smart data gathered through IoT and machine learning, to predict components under probable failure; Grid interface: smooth interaction with a power grid to export its extra power or import [illegible] of scarcity; Energy Prioritization: Adaptive algorithm prioritization with regard to user-driven conditions, such as profit optimization or environmental friendliness.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application: 31/12/2024

(21) Application No.202441104792 A
(43) Publication Date : 17/01/2025

(54) Title of the invention : AN INTELLIGENT FRAMEWORK FOR DEEP LEARNING- BASED WATER DEMAND PREDICTION IN SMART WATER DISTRIBUTION SYSTEM

(51) International classification: G06N0003080000, G06N0003045000, G06Q0030020200, G06F0018214000, G06N0003044000
(86) International Application No: NA
Filing Date: NA
(87) International Publication No: NA
(61) Patent of Addition to Application Number: NA
Filing Date: NA
(62) Divisional to Application Number: NA
Filing Date: NA

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(57) Abstract :
Abstract A comprehensive, multi-phase deep learning system for forecasting water demand is proposed. Data cleansing is the initial phase to address absent values, anomalies, and discrepancies, hence ensuring data integrity. Min-max normalisation adjusts characteristics to a specified range, typically 0 to 1, facilitating model training. Subsequently, statistical metrics such as mean, median, standard deviation, and skewness are employed to ascertKK, ain various characteristics of the dataset's distribution. Features derived from Spearman correlation demonstrate statistical relationships among variables. Deep learning-derived features utilised to extract abstract and high-level aspects of datasets. The model for sensing water demand. Hybrid DeepNet for Water Demand Forecasting employs deep learning methodologies such as RNN-LSTM to analyse sequential data and temporal patterns.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application : 17/11/2024

(21) Application No.202441088827 A
(43) Publication Date : 22/11/2024

(54) Title of the invention : Integrating Analytical and Numerical Approaches for Linear System Solutions

(51) International classification : G06F0017160000, G06F0017120000, G06F0111100000, G16C0020700000, G02B0007020000
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
Filing Date : NA
(62) Divisional to Application Number : NA
Filing Date : NA

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(57) Abstract :
The invention integrates analytical and numerical approaches to efficiently solve linear systems of equations. Combining precision with adaptability, it dynamically selects optimal methods based on matrix properties like sparsity and condition number. Analytical preprocessing, including matrix decomposition, is paired with numerical iterative techniques to ensure accuracy and scalability. Error control mechanisms monitor computations, stabilizing poorly conditioned matrices using regularization techniques. Advanced parallel and GPU-based processing enables rapid solutions for large-scale problems. A user-friendly interface offers both automatic and advanced configurations, making it accessible to experts and non-experts alike. Visualization tools enhance understanding and validation of results. The system is applicable across domains such as engineering, machine learning, and data science, addressing challenges in scalability, accuracy, and computational efficiency. This versatile tool empowers users to solve

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/10/2024

(21) Application No 202441081241 A

(43) Publication Date : 01/11/2024

(54) Title of the invention : Smart Infrastructure Monitoring System using IoT Sensors and AI-powered Predictive Maintenance

(51) International classification : G16N0020000000, G06Q0010200000, G06N0005040000, B61L0023040000, G06Q0010063100

(86) International Application No : NA
Filing Date : NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number : NA
Filing Date : NA

(62) Divisional to Application Number : NA
Filing Date : NA

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(57) Abstract :
This invention provides a Smart Infrastructure Monitoring System that integrates IoT sensors with AI-powered predictive maintenance to monitor critical infrastructure in real-time. The system deploys a network of IoT sensors to collect data such as vibration, temperature, humidity, strain, and pressure from infrastructure components like bridges, pipelines, buildings, and power grids. Edge devices perform initial data processing to detect anomalies, while a cloud-based platform leverages machine learning and AI algorithms to predict failures and recommend proactive maintenance. The system ensures early detection of potential issues, minimizing unplanned downtime, reducing maintenance costs, and enhancing safety. Through real-time alerts and predictive insights, this invention provides a scalable and cost-effective solution for infrastructure management, enabling optimal performance and reliability.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202431079450 A

(19) INDIA

(22) Date of filing of Application :18/10/2024

(43) Publication Date : 18/10/2024

(54) Title of the invention : THE INFLUENCER MARKETING EFFECT ON GENERATION Z'S PRODUCT BUYING BEHAVIOR

(51) International classification	:[illegible]
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
The present invention relates to an analytics platform designed to assess the impact of influencer marketing on the purchasing behavior of Generation Z consumers. The platform comprises a data collection module that gathers interaction data from various social media platforms, including likes, shares, comments, and user demographics related to influencer content. An influencer profiling engine categorizes influencers based on their engagement rates and relevance to Generation Z, while a sentiment analysis unit evaluates user responses to determine emotional tones. A behavioral analysis unit utilizes machine learning algorithms to predict purchasing behaviors, and a decision support system offers actionable insights for optimizing marketing strategies. This invention provides brands with a comprehensive tool to measure the effectiveness of influencer marketing, enabling them to make data-driven decisions that resonate with the preferences and behaviors of Generation Z.

No. of Pages : 18 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/09/2024

(21) Application No 202410071439 A
(43) Publication Date : 11/10/2024

(54) Title of the invention : A HYBRID AI AND MACHINE LEARNING APPROACH FOR ACCURATE SKIN CANCER DETECTION AND CLASSIFICATION

(51) International classification : G16N0010345001, A61B0005000000, G06N0003080000, G16H0050200000, G06N0020100000
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
Filing Date : NA
(62) Divisional to Application Number : NA
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(57) Abstract :
The proposed invention is a system and method employing a hybrid approach that combines Artificial Intelligence (AI) and Machine Learning (ML) techniques for accurate skin cancer detection and classification. Utilizing deep learning models like Convolutional Neural Networks (CNNs), the system extracts complex features from dermatological images to identify various skin cancer types. These features are integrated with traditional ML algorithms such as Support Vector Machines or Random Forests to enhance classification accuracy and reduce false positives. The system incorporates data augmentation and transfer learning to improve model performance with limited datasets. An interpretability module provides visual explanations of diagnostic decisions, fostering clinician trust. The user-friendly interface facilitates seamless integration into clinical workflows, offering a reliable, fast, and non-invasive diagnostic tool that aids healthcare professionals in early detection and accurate classification of skin cancers, ultimately improving patient outcomes and reducing unnecessary biopsies.

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

(12) PATENT APPLICATION PUBLICATION | (21) Application No. [illegible] A
(19) INDIA
(22) Date of filing of Application : [illegible] | (43) Publication Date : 13/09/2024

(54) Title of the invention : SECURING SPACE TOURISM OPERATIONS USING BLOCKCHAIN TECHNOLOGY

(51) International classification	[illegible]
(86) International Application No Filing Date	NA NA
(87) International Publication No	NA
(61) Patent of Addition to Application Number Filing Date	NA NA
(62) Divisional to Application Number Filing Date	NA NA

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(57) Abstract :
ABSTRACT systems are ill-equipped to handle, such as the management of high-value financial transactions, protection of sensitive passenger data, intricate supply chains, and adherence to stringent regulatory standards. By leveraging the decentralized, immutable, and transparent nature of blockchain technology, this invention creates a secure environment that addresses these challenges. It ensures data integrity and protection by decentralizing data storage, thus eliminating single points of failure and reducing vulnerabilities to cyberattacks. Financial transactions are managed through blockchain-based smart contracts, which automatically execute when specific conditions are met, minimizing the risk of fraud, human error, and disputes, while also streamlining payment processes. The invention also integrates blockchain into supply chain management, providing real-time tracking and verification of every component used in space missions, thereby ensuring that all materials meet the required standards and are free from tampering. This traceability prevents the introduction of counterfeit or substandard parts, safeguarding mission success. Additionally, the invention simplifies regulatory compliance by recording all operational [illegible] on the blockchain, creating a transparent and immutable audit trail that regulatory bodies can easily access to verify adherence to international standards. This transparency builds trust not only with regulators but also with customers and investors, ensuring confidence in the safety and reliability of space tourism operations. Designed to be scalable, the blockchain framework can adapt to the increasing complexities of the space tourism industry as it expands from suborbital flights to more ambitious lunar and interplanetary missions. By addressing these critical needs, this invention provides a robust foundation for the sustainable and secure growth of the space tourism industry, paving the way for its successful integration into the broader commercial and regulatory landscapes.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/08/2024

(21) Application No.202441062454 A
(43) Publication Date : 30/08/2024

(54) Title of the invention : 3D MODELLING AND PRINTING IN SMART TRANSPORTATION BY DEEP LEARNING FOR AGRICULTURE

(51) International classification : B33Y0010000000, G06Q3050020000, G06Q0010080000, B33Y0080000000, G06N0020000000
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
Filing Date : NA
(62) Divisional to Application Number : NA
Filing Date : NA

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(57) Abstract :
This invention radically changes a system through which deep learning, 3-D modeling, and additive manufacturing integrate to change agricultural logistics. From large agricultural data sets, our system creates highly accurate 3D models of crops, equipment, and infrastructure of conveyance. Further optimized for effective transportation and storage, these models allow for the creation of custom-designed and 3D-printed components for agricultural vehicles and logistics solutions. This novel approach tremendously reduces wastes, diminishes freight costs, and raises the level of general sustainability of supply chains. The research aims at coming up with a new system that shall integrate deep learning, 3D modeling, and additive manufacturing in order to optimize agricultural logistics. In using such technologies, the system shall be capable of: Analyze huge agricultural data sets for trends and correlations that have a bearing on efficiency in logistics. Create accurate 3D models of agricultural products, equipment, and infrastructure for optimum planning and design. Design customized components using additive manufacturing to enhance efficiency in transport and storage. Develop an integrated framework for optimizing the whole agricultural value chain from production to consumption. This vision is of a resourceful, efficient, and resilient agricultural system that can respond to an increasing global population with less environmental degradation.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/07/2024

(21) Application No.[illegible] A
(43) Publication Date : 02/08/2024

(54) Title of the invention : A PROPOSAL FOR USING NEURAL NETWORKS IN THE CREATION OF DIDACTIC SEQUENCES BASED ON THE SCORM STANDARD

(51) International classification	:[illegible]
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
[illegible] Technology has enabled great advances in the area of education, and with this arose the need to adapt physical materials to the digital environment. Among the methodologies that can be applied for this purpose are didactic sequences, which indicate the order in which students should study the content during the learning process and which can be created to meet the needs of each student. Considering the challenge of creating didactic sequences with such characteristics and that can be inserted into different learning management systems, the present work presents the development of a module capable of generating didactic sequences using Neural Networks and following the SCORM standard model, within the context of the data structure [illegible]. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5] [FIG. 6] [FIG. 7] [FIG. 8]

No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :22/07/2024

(21) Application No.202441055601 A

(43) Publication Date : 02/08/2024

(54) Title of the invention : AN EXPERIMENTAL INVESTIGATION ON INFLUENCE OF FILLER MATERIAL ON DAMPING PROPERTIES OF HYBRID COMPOSITES

(51) International classification	:B32B0005/26000, B32B0015/20000, B32B0027/38000, B32B0005/18000, B29C0070/00000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This paper presents an in-depth experimental investigation into the influence of filler material on the damping properties of hybrid composites. The study primarily focuses on laminated composite materials, chosen for their low weight, high stiffness, and superior strength-to-weight ratios. The damping properties of these materials are evaluated using the Vacuum Infusion Process (VIP), a cost-effective method for creating high-quality composite parts. The materials used in the study include basalt, stainless steel wire mesh, and silicon carbide. Basalt, known for its high strength, durability, and cost-effectiveness, is a primary choice. Stainless steel wire mesh, chosen for its hardness in abrasive machining processes, and silicon carbide, selected for its hardness and resistance to corrosion, creep, and fatigue, are also integral to the study. The fabrication of these composites involves various methods, including open mould process, closed mould process, and continuous process. The hybrid laminated composites are then cut using water jet and abrasive water jet machining, chosen for their ability to cut a variety of materials without producing heat or deflection. The hybrid laminates are subjected to a cantilever type damping test to evaluate their damping properties. The results suggest that the hybrid laminate with basalt fibre and 1.5% Silicon carbide exhibits superior damping properties and higher natural frequencies compared to all other laminates. In conclusion, the study finds that the hybrid laminate with basalt fibre and 1.5% Silicon carbide is the most promising in terms of damping properties and natural frequencies, showing a variation of 1 – 81% in natural frequency when compared to other laminates. This research provides valuable insights into the potential of hybrid laminates for applications requiring high strength and stiffness.

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

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :17/07/2024

(21) Application No.202431054736 A

(43) Publication Date : 26/07/2024

(54) Title of the invention : AI-POWERED SENTIMENT ANALYSIS FOR EFFECTIVE SOCIAL MEDIA MONITORING

(51) International classification	:[illegible]
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
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(57) Abstract :

The invention presents an AI-powered system designed for robust sentiment analysis on social media platforms. Key components include a data collection module for real-time aggregation of user-generated content across diverse social media channels. A pre-processing module ensures data cleanliness and normalization through advanced text processing techniques like tokenization and lemmatization. The sentiment analysis engine employs state-of-the-art deep learning models such as recurrent neural networks (RNNs) and transformer-based architectures to categorize sentiments into positive, negative, neutral, or mixed categories with high accuracy. An insights module offers detailed sentiment reports, trend analysis, and real-time alerts. The system features an interactive engagement interface enabling users to respond effectively to social media activity and customize alert parameters based on specific criteria. With additional modules for content analysis, multimodal content evaluation, and predictive analytics, the system enhances organizational responsiveness and strategic decision-making by providing comprehensive insights into public sentiment and market trends.

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/06/2024

(21) Application No.[illegible] A

(43) Publication Date : 21/06/2024

(54) Title of the invention : REAL-TIME CLOUD-DRIVEN MACHINE LEARNING FOR DYNAMIC ICU VENTILATOR MANAGEMENT

(51) International classification	:[illegible]
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
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(57) Abstract :

Ventilator management in intensive care units (ICUs) is essential for patient care, especially in contexts where clinical practices are continuously evolving. Optimizing ventilator management in ICUs which presents a new method based on cloud-driven machine learning that operates in real-time. Using the scalability and accessibility of the cloud, the system merges data streams from many medical devices and systems, including ventilators, electronic health records, and patient monitors. In order to provide real-time suggestions to doctors, modify ventilator settings based on predicted patient breathing patterns, and evaluate this data continually, machine learning algorithms are used. Rapid adaptability to changing patient circumstances and facilitation of individualized treatment plans are made possible by the system's use of cloud computing. Our strategy has been shown to improve patient outcomes, minimize ventilator-associated problems, and improve ICU resource usage via simulations and clinical studies. Critical care practices in the digital healthcare age stand to benefit greatly from real-time cloud-driven machine learning.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :18/05/2024

(21) Application No.202421039678 A

(43) Publication Date : 21/06/2024

(54) Title of the invention : SMART IRRIGATION FOR HOUSE POTTED PLANTS

(51) International classification	[illegible]
(86) International Application No	NA
Filing Date	NA
(87) International Publication No	NA
(61) Patent of Addition to Application Number	NA
Filing Date	NA
(62) Divisional to Application Number	NA
Filing Date	NA

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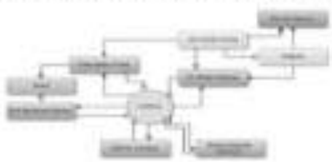
(57) Abstract :

ABSTRACT The proposed device designed to revolutionize plant care and monitoring. This versatile device combines soil moisture, temperature, and humidity sensors, along with a water pump and a camera, to create an intelligent plant management solution. Firstly, our soil moisture sensor continually measures the moisture levels in the soil. When it detects that the soil has become too dry, surpassing a predetermined threshold, it triggers the water pump to provide the necessary hydration to the plants. This automated watering process ensures that plants receive optimal moisture levels for healthy growth. Secondly, the ESP32 Camera is equipped with a sophisticated Plant Anomaly detection algorithm. This advanced feature enables the camera to detect any potential issues affecting plant health, such as leaf diseases or signs of stress. By promptly identifying these anomalies, the system empowers users to take timely action to address plant concerns. Furthermore, our device incorporates temperature and humidity sensors to monitor the surrounding environmental conditions. By continuously tracking weather parameters, the system can adapt its watering schedule and intensity accordingly. The adaptive approach ensures that plants receive personalized care tailored to their specific environmental requirements. To regulate the water flow to the plants, we've integrated a water meter controlled by a peristaltic pump. This innovative mechanism uses small tubes to deliver water precisely to each plant, ensuring uniform hydration across the garden or indoor space. Moreover, the system can adjust the water flow based on various factors, such as the individual water needs of different plant species and the likelihood of rainfall. In summary, our IoT device offers a comprehensive solution for automated plant care and monitoring. By seamlessly integrating sensor technologies, automated watering mechanisms, and advanced anomaly detection capabilities, it empowers users to nurture their plants with precision and efficiency. Whether you're a seasoned gardener or a novice plant enthusiast, our device is designed to enhance your gardening experience and help your plants thrive.



[illegible]

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

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202441015768 A

(19) INDIA

(22) Date of filing of Application :06/03/2024

(43) Publication Date : 15/03/2024

(54) Title of the invention : Development of Low-Cost Osmotic Power Generation Setup

(51) International classification	:F03G0007000000, C02F0001440000, B01D0061000000, C02F0103080000, F03D0017040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

The present invention discloses a novel and cost-effective osmotic power generation setup utilizing pressure retarded osmosis (PRO) technology. The system harnesses the energy generated from the mixing of freshwater and saltwater through a semi-permeable membrane, providing a sustainable and renewable source of power. Key aspects of the invention include the selection of affordable yet durable materials, optimized system design, and efficient utilization of a semi-permeable membrane. The construction integrates a PRO chamber, turbine, monitoring, and control systems. The design is tailored to locations with significant salinity differences, such as river estuaries or coastal areas. The invention also encompasses methods for environmental impact assessment, testing, optimization, and cost reduction strategies. By providing a scalable and environmentally friendly solution, this invention aims to contribute to the advancement of clean energy technologies with a particular emphasis on affordability and widespread applicability.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/03/2024

(21) Application No.202441015530 A

(43) Publication Date : 22/03/2024

(54) Title of the invention : VEHICLE-TO-GRID INTEGRATION: ADVANCED ENERGY MANAGEMENT SYSTEM FOR ELECTRIC VEHICLES USING DEEP LEARNING

(51) International classification : B60L0055300000, G06Q0050060000, H02J0003320000, H02J0003000000, H02J0003380000

(86) International Application No : NA
Filing Date : NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number : NA
Filing Date : NA

(62) Divisional to Application Number : NA
Filing Date : NA

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(57) Abstract :
The proposed invention introduces an advanced energy management system for electric vehicles (EVs) utilizing Deep Learning algorithms within the context of Vehicle-to-Grid (V2G) integration. By leveraging bidirectional energy flow between EVs and the electrical grid, the system optimizes energy usage, enhances grid stability, and facilitates the integration of renewable energy sources. Deep Learning algorithms analyze diverse data sources to predict energy demand, grid conditions, and EV user behavior, enabling real-time adjustments to charging and discharging schedules. The system incentivizes EV owners to participate in demand response programs and V2G services, offering financial rewards for contributing surplus energy to the grid. Scalable and interoperable, the system can be deployed across diverse EV fleets, empowering users to make informed decisions about their energy consumption while advancing the transition to a sustainable energy future.

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

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202441009710 A

(19) INDIA

(22) Date of filing of Application :13/02/2024

(43) Publication Date : 08/03/2024

(54) Title of the invention : ARTIFICIAL INTELLIGENCE-BASED NEWS QUICK REPORT GENERATION METHOD AND DEVICE

(51) International classification	:G06N0020000000, G06Q0010100000, G06F0040300000, G06F0016330000, G06Q0010060000
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :

Our proposed invention introduces an Artificial Intelligence (AI)-based news quick report generation method and device, revolutionizing the way news is consumed and produced in the digital age. Leveraging advanced AI and Natural Language Processing (NLP) techniques, our system analyzes vast amounts of textual data from diverse sources, distilling key insights and trends into concise, personalized news summaries in real-time. By employing multilingual NLP capabilities, our invention transcends linguistic barriers, facilitating cross-cultural understanding and inclusivity. The system's user-friendly interface and adaptive algorithms ensure a seamless and personalized news consumption experience, empowering users to stay informed and engaged with topics of interest. Additionally, our invention offers significant benefits for journalists and news organizations, streamlining editorial workflows and enhancing productivity. Through continuous refinement and optimization, our system represents the forefront of innovation in computational linguistics and data science, promising to reshape the media landscape and democratize access to information.

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

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/01/2024

(21) Application No.202441005427 A

(43) Publication Date : 09/02/2024

(54) Title of the invention : NANOSTRUCTURED CATALYSTS FOR GREEN SYNTHESIS OF PHARMACEUTICAL INTERMEDIATES

(51) International classification : B82Y0030000000, B01J0037100000, B01J0035000001, A61K0031000000, B01J0037000000

(86) International Application No : NA
Filing Date : NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number : NA
Filing Date : NA

(62) Divisional to Application Number : NA
Filing Date : NA

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(57) Abstract :

The present invention discloses a novel class of nanostructured catalysts designed for the green synthesis of pharmaceutical intermediates, addressing challenges associated with conventional methods. These catalysts exhibit a unique composition, comprising a core of specified nanomaterials surrounded by a tailored shell, resulting in enhanced catalytic activity, selectivity, and stability compared to traditional catalysts. The disclosed green synthesis method involves combining reactants under mild conditions, introducing the nanostructured catalyst, and conducting the reaction with reduced environmental impact and increased process efficiency. Furthermore, the invention encompasses specific embodiments, including pharmaceutical intermediate synthesis processes, enantioselective methods, and products, offering a comprehensive and sustainable approach to pharmaceutical manufacturing.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/01/2024

(21) Application No.202441001281 A
(43) Publication Date : 09/02/2024

(54) Title of the invention : ACCOUNTING AND ANALYTICAL MODEL FOR THE RISK MANAGEMENT OF THE ECONOMIC SECURITY OF THE POULTRY ENTERPRISE

(51) International classification : G06Q0010000000, G06Q0040000000, G06Q0010060000, G06Q0040080000, G06Q0040000000
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
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(62) Divisional to Application Number : NA
Filing Date : NA

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(57) Abstract :
The proposed invention encompasses an innovative Accounting and Analytical Model tailored explicitly for the poultry industry, introducing a holistic approach to risk management for enhanced economic security. By seamlessly integrating financial data, operational metrics, and risk indicators through advanced algorithms, the model provides comprehensive insights into the economic landscape of poultry enterprises. The invention facilitates proactive decision-making by identifying potential risks, forecasting economic scenarios, and suggesting tailored mitigation strategies. This transformative model aims to empower poultry farmers with the tools needed to navigate market uncertainties, optimize operational efficiency, and fortify their economic resilience, thereby fostering sustainable practices within the dynamic realm of poultry farming.

No. of Pages : 18 No. of Claims : 5