



A Century of Service to the Nation

Volume 10 | Issue 5 | May 2025

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Published by:

The Institution of Engineers (India)

8 Gokhale Road, Kolkata 700020

Telephone : 91-33-40106299/248, E-mail : newsletter@ieindia.org, Website : <http://www.ieindia.org>

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Notification

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IEI R&D Grant-in-Aid

To promote appropriate technology, assist in building up design & research talents and, most importantly, to help in nurturing potential R&D venture amongst engineering students pursuing Diploma/UG/PG/PhD courses. The Institution of Engineers (India) had instituted the R&D Grant-in-Aid program way back in 2001.

Every year, the Institution invites applications for funding industry-oriented R&D projects and research initiatives aimed at improving the life-style of common people from engineering students pursuing full time Diploma / UG / PG / PhD engineering program in AICTE / UGC / NAAC approved Institutions / Colleges / Universities. The application form and guidelines are available in our website <https://www.ieindia.org>. The projects should be carried out under the guidance of faculty members who are Corporate Members of IEI. Membership criteria for student(s), guide(s) and institution(s) are as follows:

Project Category	Student/Applicant Membership	Guide(s) Membership	Institutional Membership
1. Diploma	Exempted [Membership of Student Chapter is desirable]	AMIE/MIE/FIE	Not Mandatory
2. UG (BE/BTech/ Equivalent)	Student Member (SMIE)	AMIE/MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation or valid NIRF Rank
3. PG (ME/MTech/ Equivalent)	AMIE/MIE/FIE	MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation or valid NIRF Rank
4. PhD	AMIE/MIE/FIE	MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation or valid NIRF Rank

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Kindly go through the guidelines (visit link: <https://www.ieindia.org/webui/IEI-Activities.aspx#RnD-Initiative>) before filling up the application.

Members in the News

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Er Vignesh Saravanan K, AMIE

Assistant Professor (Grade-III)

Computer Science and Engineering Department, Ramco Institute of Technology, Rajapalayam, Tamil Nadu

✉ vigneshsaravanank@gmail.com

Patent was granted to Ramco Institute of Technology for invention titled “Comprehensive Tools to Edit the PDF and Convert into EPUB Format for Visually Impaired People” and **Er Vignesh Saravanan K** is one of the Inventor.

The details of the **Patent** are as follows:

Patent No.	: 564093
Application No.	: 202341013978
Date of Filing	: 02/03/2023
Date of Grant	: 27/03/2025
Name of Patentee	: Ramco Institute of Technology
Name of other Inventor(s)	: Dr K Vijayalakshmi, Dr R Venkatesh, Ms Saravana Jothi G, Mr Jothi Lingapandian M, Ms Ragavi V G, Ms Rajalakshmi R U, Mr Paranthaman J & Ms Shakthi S
Title of Invention	: Comprehensive Tools to Edit the PDF and Convert into EPUB Format for Visually Impaired People
Issuing Authority	: Controller of Patents, The Patent Office, Government of India, Chennai

The following esteemed corporate member was conferred with the prestigious **Professional Engineer (PE) Certificate** from IEI after successful completion of the assessment process and he has been authorised to use the style and title of **P Eng (I)** by virtue of expertise in his field:



Er Joel Santhosh, MIE & PE7007685 (Certified Professional Engineer, IEI)

Proprietor (Consultant- Concrete Products Manufacturing) - Ceracre, Karnataka

Field : Civil Engineering

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Valid from: 16 May 2025

Valid up to: 31 May 2030



40th Indian Engineering Congress

19-21 December 2025

Theme

Innovative Engineering Solutions for Viksit Bharat @ 2047

Organized by : *The Institution of Engineers (India)*

Hosted by: Durgapur Local Centre

Publication by Members

Volume 10 | Issue 5 | May 2025

Book Chapter



Dr Anand K Joshi, AMIE

Senior Scientific Officer

E3 Labs Private Limited (incubated at SID IISc Campus), Bengaluru, Karnataka

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Title of Paper: A Comparative Study of Baffle Insert Type with Stairmand Gas Solid Cyclone Separators Through Computational Technique

Futuristic Trends in Mechanical Engineering, IIP Series, Volume 3, Book 6, Part 2, Chapter 1, May 2024, pp 113-121, e-ISBN: 978-93-5747-709-3

DOI: <https://www.doi.org/10.58532/V3BGME6P2CH1>

Co-authors: Kiran Kumar Rokhade, Eshwar Udbal & S Karthik

Abstract: A gas-solid cyclone separator is used in a variety of lab-scale and industrial applications to separate the particles from the gas and increase the separator's efficiency. The CFD tool is used to determine the efficiency of the standard Stairmand cyclone and its modified design. Utilizing the turbulent module, i.e. RNG $k-\epsilon$ model and DPM, one-way coupling is used to predict the pressure drop, velocity contour, and particle velocity. A three-dimensional numerical study is conducted, and using sawdust powder, a fixed inlet velocity of 11.5 m/s and particle sizes of 2 and 4 μm are taken into consideration. The simulation results were compared between the Stairmand stairmand and baffle types underneath the cyclone. The modified design collected 82–86% of the particles, and the velocity and pressure drop are lower when compared to the Stairmand cyclone.

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- © Enhances an engineering professional's stature and gives confidence to employer/prospective employer about competency of Certified Engineer;
- © IntPE Certificate facilitates an engineer in Professional Mobility.

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Publication by Members

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Title of Paper: Enhancing Heat Transfer Analysis in Phase Change Materials Using Artificial Intelligence

Futuristic Trends in Mechanical Engineering, IIP Series, Volume 3, Book 6, Part 2, Chapter 2, May 2024, pp 122-135, e-ISBN: 978-93-5747-709-3

DOI: <https://www.doi.org/10.58532/V3BGME6P2CH2>

Co-authors: Dr Devendra Dandotiya, Dr Rudra Naik & Dr Kanchan Ganvir

Abstract: Now a days the utilization of Phase Change Materials (PCMs) has revolutionized various industries by enabling efficient thermal energy storage and temperature regulation. This Chapter focused on harnessing the power of Artificial Intelligence (AI) to enhance the analysis of heat transfer phenomena within PCMs. PCMs exhibit unique characteristics during phase transitions, demanding intricate heat transfer analysis for optimal application. This chapter delves into the integration of AI techniques, including machine learning and neural networks, to predict and optimize heat transfer processes in PCM-based systems. Through case study and discussions on Prospectus, the chapter underscores the potential of AI-driven methodologies in revolutionizing PCM-related research and applications. This chapter unveils new horizons for efficient energy storage, thermal management, and innovative industrial solutions by bridging the gap between complex heat transfer dynamics and intelligent algorithms.

Title of Paper: Municipal Waste Management System in Urban Areas

Futuristic Trends in Mechanical Engineering, IIP Series, Volume 3, Book 6, Part 2, Chapter 4, May 2024, pp 143-150, e-ISBN: 978-93-5747-709-3

DOI: <https://www.doi.org/10.58532/V3BGME6P2CH4>

Co-author: Ravi Kumar B N

Abstract: Rapid increase in different types of hazardous waste due to continuous economic growth, industrialization and urbanization is becoming a major problem for government to ensure effective and sustainable waste management. The transport, separation, handling and discarding of wastes needs to be properly managed without affecting the environmental health. At present, there is no such system of separation of dry, wet and metallic wastes. This process proposes an Automated Waste Separator (AWS) which is a simple and economical separation system for domestic purpose in the most economical and effective method. This report proposes implementation of an advanced waste separator. The waste has to be separated and monitored properly so as to gain the golden property of the waste by recycling. Also if the waste is handled manually then there is a chance of spread of diseases and various infections. If the waste is handled with fast working separator machine and a data of separated waste then it reduces the chances of various diseases by keeping it far away from workers and helps industries to make a great profit by recycling them at their required pace. The separated dry materials like plastic glass can be further recycled, the metallic waste can be melted and re-used. The wood waste can be converted into briquette and wet waste is converted into manure. This work proposes an Automatic Waste Separator (AWS) which is a cheap, easy to use solution.

Title of Paper: Influence of Injection Timing (IT) on the Performance and Emission Characteristics of a Diesel Engine Operated on Dual-fuel Mode

Futuristic Trends in Mechanical Engineering, IIP Series, Volume 3, Book 6, Part 2, Chapter 6, May 2024, pp 171-180, e-ISBN: 978-93-5747-709-3

DOI: <https://www.doi.org/10.58532/V3BGME6P2CH6>

Co-authors: Sushrut S. Halewadimath, Shrinivas Timmanagoudar, Sucheet M. Gogeri & N. R. Banapurmath

Abstract: In present scenario fossil fuels are getting depleted, in addition to this dependency and price are increasing. A time may come in future there might have no fossil fuel left. Hence we need to make use of alternate fuels, in order to make a better future. Therefore renewable fuels can be predominantly used as fuel for transportation and power generation applications. In view of this background, effect of injection timing (IT) on the performance, combustion and emission characteristics have been investigated in a single cylinder, four stroke water cooled direct injection (DI) compression ignition (CI) engine operated on dual fuel mode using Neem Oil methyl ester (NeOME) and producer gas induction. In the present experimental investigation, an effort has been made to enhance the performance of a dual fuel engine utilizing different IT (19° to 31° in step of 4°) was optimized. Results of investigation on NeOME-producer gas operation showed increased brake thermal efficiency with reduced emission levels at 27° before top dead center (bTDC).

Publication by Members

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Paper published in the Journals / Proceedings



Prof Lala Behari Sukla, FIE

Director

Biofuels & Bioprocessing Research Center, SOA University, Bhubaneswar

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Title of Paper: Biosynthesis of Phosphorus Nanoparticles for Sustainable Agroecosystems: Next Generation Nanotechnology Application for Improved Plant Growth

ACS Omega, 10(15), April 2025, pp 14555–14565

DOI: <https://doi.org/10.1021/acsomega.5c01082>

Co-authors: D P Krishna Samal & Ajit Kumar Bishoyi

Abstract: The rising global food demand needs novel approaches to increasing agricultural yield while minimizing environmental effect. Phosphorus (P) is important for almost all the physiological and biochemical processes in plants. However, the phosphorus availability in soil is limited in soil due to fixation. Excess application of phosphorus-based fertilizers causes environmental hazards like eutrophication, soil degradation, damage to the aquatic ecosystem, and groundwater pollution. One of the most remarkable approaches to counter these issues could be an application of nanotechnology with special regard to nano application of phosphorus nano particles. Phosphorus nanoparticles are expected to enhance phosphorus bioavailability, thereby improving nutrient-use efficiency. These nanoscale fertilizers facilitate controlled release of phosphorus, improved plant growth, germination, and increased crop yield. Other benefits include reduced use of conventional fertilizers, therefore preventing environmental degradation in conjunction with supporting the cause of sustainable agriculture. Despite these potential benefits limited research has explored the detailed application of phosphorus nanoparticles in agriculture. This review has embarked upon the synthesis, sources, and interaction of phosphorus nanoparticles with plants, by highlighting their potential in improving seed germination, crop yield, and bioremediation. Various sources of phosphorus nanoparticles are discussed and their eco-microbiological advantages examined. The introduction of phosphorus nanoparticles in agricultural practices can be a transformative step toward a cost-effective and sustainable agroecosystem.

Keywords: Nanoparticles; Phosphates; Phosphorus; Plants; Soils

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Publication by Members

Volume 10 | Issue 5 | May 2025



Dr Kamal Kumar, MIE

Technical Officer-C

Defence Materials and Stores Research & Development Establishment, Kanpur

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Title of Paper: Thermal and Electrical Properties of Multi-Layer Knitted Fabric Assemblies for Protective Clothing

Indian Journal of Fibre & Textile Research, CSIR-National Institute of Science Communication and Policy Research (NIScPR), 50(1), March 2025, pp. 70-76, ISSN: 0971-0426 (Print), 0975-1025 (Online)

DOI: <https://doi.org/10.56042/ijfr.v50i1.5764>

Co-authors: Apurba Das, Prashant Vishnoi, Jitendra Pratap Singh, Shanu Prabhakar & Ashok Kr. Yadav

Abstract: This study investigates the thermal comfort properties of knitted fabrics by analysing key parameters such as thermal conductivity, thermal resistance, and surface and volume resistivity. Single- and multi-layer fabric assemblies, comprising wool/acrylic blends with varying ratios and polypropylene fabrics with different filament counts, are examined in combination with lightweight 100% cotton and breathable fabrics. The influence of these variables on the thermal and electrical properties of knitted fabrics is systematically evaluated. The aim is to establish relationships between the thermal insulation and electrical properties of single-layer and multilayer fabric assemblies. The findings reveal that the highest thermal resistance is observed in CP9B (a three-layer assembly comprising cotton fabric, polypropylene pile-knitted fabric and breathable fabric). The highest surface and volume resistivity values are recorded in sample CP1B.

Keywords: Breathable Fabric; Polypropylene; Surface Resistivity; Thermal Comfort; Volume Resistivity; Wool/acrylic

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Articles Published in Latest Issue of IEI Journals

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Journal of The Institution of Engineers (India): Series D

[Metallurgy & Materials, Mining Engineering]
(Electronic ISSN: 2250-2130; Print ISSN: 2250-2122)

[CiteScore: 2.0; h5 Index: 19]

[SCOPUS Indexed]

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Volume 106, Issue 1, April 2025

- Title:** **Replication of the Al/Ti Metal Intermetallic Laminates Using LS Dyna for Tungsten Alloy Penetrator Application**
- Authors:** **B. Blessto, Sarath Nair, K. Sivaprasad & D. Nagarajan**
Advanced Materials Processing Laboratory, Department of Metallurgical and Materials Engineering, National Institute of Technology Tiruchirappalli, Tiruchirappalli, Tamil Nadu, 620015, India
- DOI:** <https://doi.org/10.1007/s40033-020-00208-3>
- Online Publication Date:** 28 March 2020
- Pages:** 1–7
- Title:** **The Investigation of Microstructure and Mechanical Property of Incorporation of Cerium Oxide to AA2219 Through Liquid Forging Technique**
- Authors:** **A. Karthik, R. Karunanithi, S. A. Srinivasan & S. P. Kumareshbabu**
Department of Mechanical Engineering, B.S. Abdur Rahman Crescent Institute of Science and Technology, Seethakathi Estate, Vandalur, Chennai, Tamil Nadu, 600048, India
Department of Aerospace Engineering, B.S. Abdur Rahman Crescent Institute of Science and Technology, Seethakathi Estate, Vandalur, Chennai, Tamil Nadu, 600048, India
Department of Metallurgical and Materials Engineering, National Institute of Technology, Tiruchirappalli, Tanjore Main Road, National Highway 67, Tiruchirappalli, Tamil Nadu, 620015, India
- DOI:** <https://doi.org/10.1007/s40033-020-00212-7>
- Online Publication Date:** 02 May 2020
- Page:** 9–17
- Title:** **Optimization of Heat Treatment Parameters of 25Cr-8Ni-4Mo-N Cast 5A Duplex Stainless Steel Using Thermodynamic Modelling and Taguchi Methodology**
- Authors:** **Vivek Gaurav, Sankara Raman Sankaranarayanan, S. P. Kumaresh Babu & A. Vallimanalan**
National Institute of Technology Tiruchirappalli, Trichy, Tamil Nadu, India
- DOI:** <https://doi.org/10.1007/s40033-020-00213-6>
- Online Publication Date:** 08 April 2020
- Page:** 19–26
- Title:** **Studies on the Role of Graphene Nanoplatelets on Mechanical Properties, Dynamic-mechanical and Thermogravimetric Analysis of Carbon-Epoxy Composites**
- Authors:** **B. Muralidhara, S. P. Kumaresh Babu & B. Suresha**
National Institute of Technology Tiruchirappalli, Tiruchirappalli, India
The National Institute of Engineering, Mysore, India
- DOI:** <https://doi.org/10.1007/s40033-020-00219-0>
- Online Publication Date:** 18 May 2020
- Pages:** 27–33

Articles Published in Latest Issue of IET Journals

Volume 10 | Issue 5 | May 2025

- Title: **Wear Behavioral and Mechanical Studies on Liquid Forged VAL12 Alloy Strengthened by Lanthanum Oxide Dispersoids**
Authors: **S. A. Srinivasan, S. P. Kumaresh Babu, B. Thirumaran & A. Vallimanalan**
National Institute of Technology Tiruchirappalli, Trichy, Tamilnadu, India
DOI: <https://doi.org/10.1007/s40033-020-00224-3>
Online Publication Date: 25 June 2020
Pages: 35–48
- Title: **Attributes of Spark Plasma Sintering on Developing Oxide Dispersion Strengthened Ferritic Steels and Understanding Structure-Property Relation**
Authors: **B. V. Ponraj & S. Kumaran**
Department of Metallurgical and Materials Engineering, National Institute of Technology, Tiruchirappalli, Tamilnadu, 620015, India
DOI: <https://doi.org/10.1007/s40033-020-00241-2>
Online Publication Date: 18 November 2020
Pages: 49–55
- Title: **Tribological Characterization of Iron-Based Self-Lubricating Composite under Dry Sliding Conditions**
Authors: **Pranav Dev Srivivas & M. S. Charoo**
Mechanical Engineering Department, National Institute of Technology, Srinagar, India
DOI: <https://doi.org/10.1007/s40033-021-00265-2>
Online Publication Date: 17 April 2021
Pages: 57–64
- Title: **Wettability Analysis of Hydrophobic Micro-dimpled HSS Surfaces**
Authors: **Manoj Nikam, Tribeni Roy & Sachin Mastud**
Department of Production Engineering, VJTI Matunga, H R Mahajani Rd, Matunga, Mumbai, Maharashtra, 400019, India
Department of Mechanical Engineering, Imperial College London, London, SW7 2AZ, UK
Department of Mechanical Engineering, VJTI Matunga, H R Mahajani Rd, Matunga, Mumbai, Maharashtra, 400019, India
DOI: <https://doi.org/10.1007/s40033-021-00269-y>
Online Publication Date: 10 June 2021
Pages: 65–76
- Title: **Tribological Characterization of Simarouba Glauca Methyl Ester (SGME) Using Oxide Nanoadditives**
Authors: **Eknath Nivrutti Aitavade & S. C. Kamate**
Zeal Education Society, Pune, Maharashtra, India
Hirasugar Institute of Technology, Nidasoshi, Belagavi, Karnataka, India
DOI: <https://doi.org/10.1007/s40033-021-00305-x>
Online Publication Date: 31 January 2022
Pages: 77–83
- Title: **Optimization of Dry Sliding Wear Parameters of Graphene-Filled Flax Fiber-Reinforced Epoxy Composites using Taguchi Grey Relational Analysis**
Authors: **M. Kamaraj, R. Manimaran & S. Datta**
SRM Institute of Science and Technology, Chengalpattu, Tamilnadu, India
DOI: <https://doi.org/10.1007/s40033-022-00331-3>
Online Publication Date: 31 January 2022
Pages: 85–94

Articles Published in Latest Issue of IET Journals

Volume 10 | Issue 5 | May 2025

- Title:** **Analysis of Thermoelastohydrodynamic Lubrication of Journal Bearing including the Effect of Surface Roughness and Cavitation**
- Authors:** **Nagarjuna Baineni, Nitin Borse & Shriniwas Chippa**
Department of Mechanical Engineering, Vishwakarma Institute of Technology, Pune, India
- DOI:** <https://doi.org/10.1007/s40033-022-00335-z>
- Online Publication Date:** 05 March 2022
- Pages:** 95–105
- Title:** **Vibration Damping Analysis for Drilling Process Using MR Fluid-Assisted Worktable**
- Authors:** **A. Vijaya & C. Shraavan Kumar**
Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamilnadu, 603203, India
- DOI:** <https://doi.org/10.1007/s40033-022-00354-w>
- Online Publication Date:** 07 May 2022
- Pages:** 107–114
- Title:** **Enhancing the Mechanical Behaviour of Fused Filament Fabricated Carbon Fibre-Reinforced Poly-lactic Acid**
- Authors:** **Akash Jain, Ankit Sahai & Rahul Swarup Sharma**
3D Printing and Additive Manufacturing Lab, Department of Mechanical Engineering, Dayalbagh Educational Institute, Dayalbagh, Agra, UP, India
- DOI:** <https://doi.org/10.1007/s40033-023-00498-3>
- Online Publication Date:** 04 June 2023
- Pages:** 115–122
- Title:** **Predicting the Mechanical Characteristics of Friction Surfaced Aluminium Deposition Using RSM, ANN and PSO Optimization: A Comparative Evaluation**
- Authors:** **Dillip Kumar Sahoo, Nassion Neupane, Siddhartha Babu Chaudhary & Bachina Harish Babu**
School of Mechanical Engineering, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, 600119, India
Department of Automobile Engineering, VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad, Telangana State, 500090, India
- DOI:** <https://doi.org/10.1007/s40033-023-00591-7>
- Online Publication Date:** 28 November 2023
- Pages:** 123–138
- Title:** **Fabrication and Characterisation of Saw Dust Polymer Composite**
- Authors:** **S. Murugapoopathi, G. Ashwin Prabhu, G. Chandrasekar, R. Selvam, T. Gavaskar & S. Sudhagar**
Department of Mechanical Engineering, PSNA College of Engineering and Technology, Dindigul, India
Department of Mechanical Engineering, St. Joseph's College of Engineering, OMR, Chennai, 119, India
Department of Mechanical Engineering, University College of Engineering, Anna University Regional Campus, Madurai, India
- DOI:** <https://doi.org/10.1007/s40033-023-00596-2>
- Online Publication Date:** 11 December 2023
- Pages:** 139–144
- Title:** **Machining Characteristics Evaluation of Al7075–TiB₂ In Situ Composite Using Abrasive Water Jet Machining with Varied Test Parameters**

Articles Published in Latest Issue of IEI Journals

Volume 10 | Issue 5 | May 2025

- Authors:** **J. T. Kavya, R. Keshavamurthy, M. K. Ravishankar & G. S. Pradeep Kumar**
Department of Automobile Engineering, Dayananda Sagar College of Engineering, Bangalore, 560111, India
Department of Mechanical Engineering, Dayananda Sagar College of Engineering, Bangalore, 560111, India
Department of Automobile Engineering, Malnad College of Engineering, Hassan, 573202, India
Department of Mechanical and Automobile Engineering, Christ University, Bengaluru, 560074, India
- DOI:** <https://doi.org/10.1007/s40033-023-00597-1>
- Online Publication Date:** 09 December 2023
- Pages:** 145–155
- Title:** **Analytical and Finite Element Analysis of Natural Fiber Reinforced Composites for Application in Food Packaging Industry**
- Authors:** **Shahana Parbin, Sushen Kirtania & Satadru Kashyap**
Department of Mechanical Engineering, Tezpur University, P. O: Napaam, Sonitpur, Assam, 784028, India
- DOI:** <https://doi.org/10.1007/s40033-023-00601-8>
- Online Publication Date:** 12 December 2023
- Pages:** 157–166
- Title:** **Analysis of European Systems for Checking and Monitoring of Railway Pantographs: An Opportunity for Indian Railway**
- Authors:** **Ankita Das, O. Fomin, O. Kozyuka, Adil Wazeer, Amit Karmakar & Apurba Das**
School of Laser Science and Engineering, Jadavpur University, Kolkata, West Bengal, 700032, India
Department of Cars and Carriage Facilities, State University of Infrastructure and Technologies, Kyrylivskastr., 9, Kiev, 04071, Ukraine
School of Materials Engineering, Purdue University, West Lafayette, IN, 47907, USA
Department of Mechanical Engineering, Jadavpur University, Kolkata, West Bengal, 700032, India
Department of Mechanical Engineering, IEST-Shibpur, Howrah, West Bengal, 711103, India
- DOI:** <https://doi.org/10.1007/s40033-023-00603-6>
- Online Publication Date:** 12 December 2023
- Pages:** 167–176
- Title:** **Synthesis and Characterization of Precursors $\text{Ni}_{0.5}\text{Mn}_{0.4}\text{Co}_{0.1}(\text{OH})_2$ by Coprecipitation Method**
- Authors:** **Yustinus Purwamargapratala, Anne Zulfia Syahrial, Evvy Kartini & Yohanes Juan Bagus Simorangkir**
Department of Metallurgy and Material Engineering, University of Indonesia, Depok, West Java, 16424, Indonesia
National Research and Innovation Agency, Serpong, Banten, 15310, Indonesia
Department of Mechanical Engineering, Sultan Ageng Tirtayasa University, Cilegon, Banten, 42434, Indonesia
- DOI:** <https://doi.org/10.1007/s40033-023-00606-3>
- Online Publication Date:** 08 July 2024
- Pages:** 177–182
- Title:** **Numerical Analysis of Biomass Blending with Indian Coal in 210 MW Boiler**
- Authors:** **K. H. Arunkumar, Puneeth & M. A. Mateen**

Articles Published in Latest Issue of IEI Journals

Volume 10 | Issue 5 | May 2025

- DOI: <https://doi.org/10.1007/s40033-023-00615-2>
Online Publication Date: 27 December 2023
Pages: 183–196
- Title: **Analysis and Optimization of Process Parameters to Develop Nanohybrid Composites of Vanadium Pentoxide/Reduced Graphene Oxide**
- Authors: **Sujan Chakraborty, Mahantesh M. Math, R. S. Vijaykumar, Saravana Bavan, M. Keshav, B. Nandini, M. Krishna & C. Durga Prasad**
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- DOI: <https://doi.org/10.1007/s40033-023-00618-z>
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- Title: **Study of Wear Behavior of Silicon Carbide and Boron Carbide Reinforced Aluminium Alloy (Al6061) Matrix Composites**
- Authors: **P. Ranjitha, D. Saravana Bhavan, B. S. Ajaykumar, T. Hemanth Raju, B. Manjunatha & S. Udayashankar**
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- DOI: <https://doi.org/10.1007/s40033-023-00625-0>
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- Title: **Appraisal of Mechanical and Tribological Performance of Onyx and Carbon Fiber Composites Produced Through Various Layering Approaches in Continuous Fused Filament Fabricated**
- Authors: **R. Soundararajan, E. Dharunprakash, N. Arjunkumaar & A. D. Gowthamprasath**
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- DOI: <https://doi.org/10.1007/s40033-023-00626-z>
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- Title: **Machinability Study of Cu-Al-Mn Shape Memory Alloys using Taguchi Method**
- Authors: **N. Praveen, U. S. Mallik, A. G. Shivasiddaramaiah, Rajashekhar Hosalli, C. Durga Prasad &**

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DOI: <https://doi.org/10.1007/s40033-023-00629-w>

Online Publication Date: 19 January 2024

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Authors: **Lohitesh Jaga Kumar, Jagadeesh P. Ganjigatti, G. Irfan & R. Thara**

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DOI: <https://doi.org/10.1007/s40033-023-00630-3>

Online Publication Date: 24 January 2024

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Title: **A Comparative Study on the Properties of Carbon Fiber-Reinforced Polymer Composites Developed by Hand Layup and Vacuum Bagging Molding Techniques**

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DOI: <https://doi.org/10.1007/s40033-023-00631-2>

Online Publication Date: 20 January 2024

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DOI: <https://doi.org/10.1007/s40033-023-00632-1>

Online Publication Date: 29 January 2024

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Authors: **M. Kavitha, S. Sarvesh, Mohamed Arshad, M. Surendar & G. Ragavan**

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DOI: <https://doi.org/10.1007/s40033-023-00634-z>

Online Publication Date: 04 February 2024

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- Title:** Tribological Properties of AA7175 Reinforced with SiC, B4C and Gr Hybrid Composite Using Taguchi Design Technique
Authors: Neeraj Kumar, Dinesh Khanduja & Ravi Pratap Singh
Department of Mechanical Engineering, NIT, Kurukshetra, Haryana, 136119, India
DOI: <https://doi.org/10.1007/s40033-024-00637-4>
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- Title:** Experimental Investigations and Multiobjective Optimization in Machining of INCONEL X750 Superalloy Using Cryogenically Treated PVD-Coated Tool
Authors: Mitali S. Mhatre & Dadarao N. Raut
Department of Production Engineering, Veermata Jijabai Technological Institute, Matunga, Mumbai, Maharashtra, 400019, India
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- Title:** An Experimental Investigation on Mechanical and Tribological Properties of Metal Matrix Composites Fabricated with Waste Aluminum, SAC, and CDPF via Stir Casting
Authors: Shailendra Kumar Verma, Vijay Kumar Dwivedi & Shashi Prakash Dwivedi
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Online Publication Date: 28 January 2024
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- Title:** Experimental Investigation on Hybrid Aluminium Metal Matrix Composite Spur Gears
Authors: Shridhar H. Budapanahalli, S. B. Mallur, Arun Y. Patil & Sandeep C. Dhaduti
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DOI: <https://doi.org/10.1007/s40033-024-00646-3>
Online Publication Date: 31 January 2024
Pages: 333–338
- Title:** Investigation of Mechanical Properties of Al6061-SiC-B4C Composites Produced by Using Stir Casting Method
Authors: P. Ranjitha, D. Saravana Bavan, B. S. Ajaykumar, T. Hemanth Raju & S. Udayashankar
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- Title: **Finite Element Analysis Approach for Optimal Design and Mechanical Performance Prediction of Additive Manufactured Sandwich Lattice Structures**
Authors: **Chaitanya Pranavi Karri & Venkatasubbaiah Kambagowni**
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Authors: **M. Vinod, C. Anil Kumar, Shrishail B. Sollapur, Santosh Patro, Mahesh M. Kawade, G. Kishore Chowdari & Saravana Bavan**
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DOI: <https://doi.org/10.1007/s40033-024-00657-0>

Online Publication Date: 29 February 2024

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Authors: **N. G. Siddeshkumar, C. Durga Prasad, R. Suresh, K. R. Varun, Santosh Patro, Sandeep Kore, Sanjay Ramchandra Pawar & T. A. Sudarshan**

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DOI: <https://doi.org/10.1007/s40033-024-00658-z>

Online Publication Date: 27 February 2024

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DOI: <https://doi.org/10.1007/s40033-024-00659-y>

Online Publication Date: 26 February 2024

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Authors: **Saurabh Dewangan, Gopal Sukhwai, Siddharth Naidu, Lav Maheshwari, Harsh Surana & Avaneesh Rajesh Kulkarni**

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DOI: <https://doi.org/10.1007/s40033-024-00661-4>

Online Publication Date: 19 March 2024

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DOI: <https://doi.org/10.1007/s40033-024-00666-z>

Online Publication Date: 09 March 2024

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Authors: **Raghupatruni Bhima Rao, Deependra Singh, Bighnaraj Mishra & Shiv Kumar I. Angadi**

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DOI: <https://doi.org/10.1007/s40033-024-00671-2>

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Authors: **N. D. Solomon Godwin Babu, Vijetha Ponnamp, Subbaiah Tondepu & S. P. Shanmugapriya**

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Online Publication Date: 12 March 2024
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Authors: **Mohan Poojari, Harshitha Madhusoodan Jathanna, V. S. Vijay, Sharun Mendonca & Rolvin DSilva**
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DOI: <https://doi.org/10.1007/s40033-024-00698-5>
Online Publication Date: 23 April 2024
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Authors: **G. R. Gurunagendra, K. S. Anil Kumar, V. Ravikumar, G. Veerasha, B. Manjunatha & Mahadeva Prasad**
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DOI: <https://doi.org/10.1007/s40033-024-00699-4>

Online Publication Date: 05 April 2024

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Title: **A Novel Predictive Framework for the Determination of the Threshold Limit Velocity of Open-Cast Mine Slopes**

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DOI: <https://doi.org/10.1007/s40033-024-00770-0>

Online Publication Date: 10 June 2024

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Title: **Integrated Approach to Reserve Estimation and Optimal Open Pit Design for Hydrothermal Gold Deposit**

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DOI: <https://doi.org/10.1007/s40033-024-00776-8>

Online Publication Date: 18 June 2024

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DOI: <https://doi.org/10.1007/s40033-024-00800-x>

Online Publication Date: 07 September 2024

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Authors: **K. Venkateswara Reddy, M. Vykuntarao, Kishore Kumar Kandi, Rama Bhadri Raju Chekuri, Raju Chekuri, Durga Venkatesh Janaki & M. V. N. V. Satyanarayana**

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DOI: <https://doi.org/10.1007/s40033-024-00804-7>

Online Publication Date: 25 August 2024

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DOI: <https://doi.org/10.1007/s40033-024-00805-6>

Online Publication Date: 28 August 2024

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Authors: **K. Chauhan, D. Banerjee & V. P. Shrivastava**

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DOI: <https://doi.org/10.1007/s40033-024-00806-5>

Online Publication Date: 02 September 2024

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Authors: **S Sarveswara Reddy, K. V Durga Rajesh & A. K. Maiti**

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DOI: <https://doi.org/10.1007/s40033-024-00809-2>

Online Publication Date: 27 August 2024

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Authors: **Jai Parkash, Harminder Singh Saggi & Hitesh Vasudev**

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DOI: <https://doi.org/10.1007/s40033-024-00811-8>

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- DOI: <https://doi.org/10.1007/s40033-024-00812-7>
- Online Publication Date: 26 September 2024
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- Title: **Optimizing CIGS Solar Cell Performance Through Numerical Optimization Using TCAD Tools**
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- DOI: <https://doi.org/10.1007/s40033-024-00814-5>
- Online Publication Date: 19 September 2024
- Pages: 663–675
- Title: **Effect of Yttria and Ceria Particulates Inclusion on Corrosion Characteristics and Mechanical Properties of AZ91D Mg Alloy Composites Fabricated Through Metallurgical Routing Technique**
- Authors: **D. Suresh Kumar, Santhosh Gotaganaki, M. Prashanth & R. Muralimohan**
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- DOI: <https://doi.org/10.1007/s40033-024-00815-4>



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Title: **Determination of Most Favorable Room and Post Pillar Combination in Cut and Fill Stopes: A Finite Element Method (FEM) Based Analysis**

Authors: **Falguni Sarkar & Kadam Mishra**

Department of Mining Engineering, National Institute of Technology, Rourkela (NIT-Rourkela), Rourkela, Odisha, 769008, India

National Institute of Technology, Rourkela (NIT-Rourkela), Rourkela, Odisha, 769008, India

DOI: <https://doi.org/10.1007/s40033-024-00837-y>

Online Publication Date: 06 November 2024

Pages: 691–703

Title: **A Study of Environmental Parameters Influencing Sustainable Mining**

Authors: **K. Venkata Ramana, T. Srinivas & S. Eswara Rao**

Department of Civil Engineering, GITAM Deemed to be University, Rushikonda, Visakhapatnam-45, India

DOI: <https://doi.org/10.1007/s40033-024-00842-1>

Online Publication Date: 27 November 2024

Pages: 705–716

Title: **Grade Estimation Using Machine Learning Techniques in Indian Copper Deposits**

Authors: **Tapan Dey & Gopinath Samanta**

Data and Analytics, TCS, Kolkata, 700156, India

Process Technology Group, Tata Steel Ltd., Jamshedpur, 831001, India

DOI: <https://doi.org/10.1007/s40033-025-00873-2>

Online Publication Date: 14 February 2025

Pages: 717–723

Title: **Mapping the Landscape of In-Situ Continuous Reinforcement in FFF Using a Single Nozzle: A Bibliometric Analysis**

Authors: **Jaydeep R. Shah & Shashank Thanki**

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Institute of Management, Nirma University, Ahmedabad, Gujarat, 382481, India

DOI: <https://doi.org/10.1007/s40033-023-00570-y>

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Articles Published in Latest Issue of IEI Journals

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Online Publication Date: 23 October 2023

Pages: 725–735

Title: **Preparation and Characterization Techniques of High-Density Polyethylene (HDPE) Reinforced with Multi-walled Carbon Nanotube (MWCNT) Nano-composites — A Review**

Authors: **K. Suhas & B. R. N. Murthy**

Department of Mechanical and Industrial Engineering, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal, Karnataka, 576104, India

DOI: <https://doi.org/10.1007/s40033-023-00576-6>

Online Publication Date: 06 November 2023

Pages: 737–751

Title: **A Review on Tribological and Corrosion Behaviour of Thermal Spray Coatings**

Authors: **Virupakshappa Lakkannavar, K. B. Yogesha, C. Durga Prasad, M. Mruthunjaya & R. Suresh**

Department of Mechanical Engineering, JSS Academy of Technical Education, Bengaluru and Visvesvaraya Technological University, Belagavi, Karnataka, India

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Visvesvaraya Technological University, Belagavi, Karnataka, India

Department of Mechanical Engineering, M. S. Ramaiah University of Applied Science, Bangalore, India

DOI: <https://doi.org/10.1007/s40033-024-00636-5>

Online Publication Date: 27 January 2024

Pages: 753–769

Title: **Metal Matrix Composites Processed Through Powder Metallurgy: A Brief Overview**

Authors: **Ziyauddin Seikh, Mukandar Sekh, Gurudas Mandal, Barnali Sengupta & Arijit Sinha**

Department of Mechanical Engineering, Aliah University, Kolkata, 700160, India

Department of Metallurgical Engineering, Kazi Nazrul University, Asansol, 713340, India

DOI: <https://doi.org/10.1007/s40033-024-00651-6>

Online Publication Date: 29 February 2024

Pages: 771–778

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1

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Sl. No.	Name of the Course	Scheduled Dates
1.	5S for Work Place Excellence	02 - 04 Jun 25
2.	Working with BOSS Linux & LibreOffice	02 - 05 Jun 25
3.	Aerospace materials –Selection, Processing, Testing & Applications, Qualification and Certification process	02 - 06 Jun 25
4.	Advances in Fusion and Solid-State Welding Technologies and Non-Destructive Testing (NDT) Methods	02 - 06 Jun 25
5.	Climate Change and Its Impacts on the Energy Sector	11 - 13 Jun 25
6.	Professional Management Programme for Trade Union Leaders in Mining Industry	04 - 06 Jun 25
7.	Air Pollution Monitoring & Modeling using Software Applications – Theory & Practical's.	09 - 11 Jun 25
8.	Advanced Office Management & Effective Administration	09 - 11 Jun 25
9.	Coating & Paint Technology	09 - 12 Jun 25
10.	Automation in Micro Irrigation Systems for improving Irrigation Efficiency	09 - 13 Jun 25
11.	Rooftop Solar PV Grid - Design, Erection, Commissioning & Maintenance - PM Suryagharyojana Scheme	10 - 12 Jun 25
12.	Training on Pedagogy, Accreditation, Research and Entrepreneurship	11 - 13 Jun 25
13.	Trends in Drilling & Blasting Operations in Mining for Blasting Engineers.	11 - 13 Jun 25
14.	E-Tendering and Condition of Contract for EPC /Turnkey projects	16 - 18 Jun 25
15.	Condition Based Maintenance – Oil and Wear Debris Analysis (including AI based)	16 - 19 Jun 25
16.	Mobile Application Development Using REACT NATIVE	16 - 21 Jun 25
17.	Mine & Land Surveying through Advanced Technology - Total Station, DGPS, 3D Laser Scanner, LiDaR, Drones, GIS, Remote Sensing Demonstration and Hands-on Training on Instruments	17 - 20 Jun 25
18.	Substation Automation and Smart Grids	17 - 20 Jun 25
19.	Data Security & Digital Personal Data Protection Act (DPDP) 2023	18 - 20 Jun 25
20.	Reservoir Sedimentation Impact and Management Strategies	23 - 25 Jun 25
21.	Non-Destructive Testing of materials. – Principles, Equipment, Calibration, & Data Interpretation	23 - 26 Jun 25
22.	Certification on Microsoft Power BI Data Analyst (PL 300)	23 - 26 Jun 25
23.	Industrial Bearings Revisited- Maintenance, Condition Monitoring, Analysis and Prevention of Failures	23 - 26 Jun 25
24.	Laboratory Management System Awareness & Internal Auditing (As per ISO/IEC 17025:2017 & NABL Requirements)	23 - 26 Jun 25
25.	Environmental Issues, Challenges and Pollution Control Strategies in Thermal Power Plants	24 - 26 Jun 25
26.	Governance for Climate Resilience: Embedding ESG Principles in Organizations	18 - 20 Jun 25
27.	Application of GIS, GPS & RS in Environmental Data Management.	25 - 27 Jun 25
28.	Leadership Styles and Teambuilding Skills for Organizational Development	25 - 27 Jun 25
29.	Application of Digital Technologies to Promote Safety and Productivity - Application of Internet of Things (IoT), Smart Sensors and Artificial Intelligence, Remote Operations, Men-Tracking	25 - 27 Jun 25

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