

*A Century of Service to the Nation*

**Volume 10 | Issue 11 | November 2025**

### Inside this issue

- 2 Notification on the R&D
- 3 Members in the News
- 3 Notification on Know-Your-Member (KYM)
- 4 Notification on 40th Indian Engineering Congress
- 6 Publication by Members
- 6 Notification on Professional Engineers (PE) Certification by IEI — A Pathway towards Success
- 7 Notification on Be Proud to be a Certified International Professional Engineers (IntPE) by IEI
- 8 IEI-Springer Journals
- 13 Articles Published in Latest Issue of IEI Journals
- 20 Announcements on IEI Industry Excellence Award 2025
- 20 Notification on Corporate Air Ticketing for IEI Members
- 21 Announcements on IEI Engineering Education Excellence Award 2025
- 21 Notification on Discount at the Samsung e-store for IEI Corporate Members
- 22 Nota Bene
- 26 Notification on Advertisement in IEI Epitome
- 27 Continuing Professional Development Programmes of ESCI

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**President**  
**Er VB Singh**

**Editor**

**Maj Gen (Dr) MJS Syali, VSM (Retd)**  
Secretary & Director General

**Special Contribution**

Mr S Chakraverty, Dr K Sen, Mr D Nath, Mr S Bagchi, Mr B Mukherjee, Mr P Barik, Ms P Nath,  
Ms T Kumar, Mr S K Mishra

**Design & Outlay**  
Ms H Roy

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# Notification on the R&D

Volume 10 | Issue 11 | November 2025

## 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) has instituted the R&D Grant-in-Aid programme way back in 2001.

Like every year, the Institution invites applications for the session 2025-26 for funding industry-oriented R&D projects and research initiatives aimed at improving the lifestyle of common people from engineering students pursuing full-time Diploma/UG/PG/PhD engineering programme in AICTE/UGC/NAAC approved Institutions/Colleges/Universities. The application form and guidelines are available on 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 investigator(s), guide(s) and Institution(s) are as follows:

Project Category	Student/Applicant Membership	Guide(s) Membership	Institutional Membership	Quantum of Grant (INR)
1. Diploma	Exempted [Membership of Student Chapter is desirable]	AMIE/MIE/FIE	Not Mandatory	Not exceeding ₹15,000/- for a single project
2. UG (BE/ BTech/ AMIE/ Equivalent)	SMIE	AMIE/ MIE/ FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation	Not exceeding ₹50,000/- for a single project
3. PG (ME/ MTech/ Equivalent)	AMIE/ MIE/ FIE	MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation	Not exceeding ₹1,00,000/- for a single project
4. PhD	AMIE/ MIE/ FIE	MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation	Not exceeding ₹1,50,000/- for a single project

The soft copy of the duly filled-up applications (in editable format), as per the pro-forma available in our website [www.ieindia.org](http://www.ieindia.org), should be sent through email to [research@ieindia.org](mailto:research@ieindia.org) and one printed copy of the same should reach the following address:

**The Deputy Director (Technical)**

The Institution of Engineers (India)  
8 Gokhale Road, Kolkata 700 020

Applications received in format other than that available on our website will not be accepted. Application should be forwarded through the Guide, Head of the Department or Head of the Institution. Please note that preference will be given to project proposals received from Institutions who are Members of The Institution of Engineers (India) and with NBA / NAAC Accreditation. Kindly go through the guidelines (visit link <https://shorturl.at/BiAOQ>) carefully before filling up the application.

The grant is not intended for the faculty members / working individuals who have access to other avenues of research funding. Proposals received will be scrutinized and the recipients of R&D Grant will be informed accordingly.

# Members in the News

Volume 10 | Issue 11 | November 2025



**Dr Sanjay Kumar Srivastava, FIE**  
Sanjay & Associates, Prayagraj, Uttar Pradesh  
✉ [sanjaysri\\_engineer@yahoo.co.in](mailto:sanjaysri_engineer@yahoo.co.in)

Dr Sanjay Kumar Srivastava received the **Doctor of Philosophy (PhD)** degree in Mechanical Engineering from Sam Higginbottom University of Agriculture, Technology and Sciences at University Convocation on 17 October 2025 for the thesis entitled 'Experimental Investigation of a Box Type Solar Cooker with Energy Storage Medium'.



**Dr Srinivasa Rao Pundru, FIE**  
Academic Expert  
Mahatma Gandhi Institute of Technology, India  
✉ [srinupundru@gmail.com](mailto:srinupundru@gmail.com)

Dr Srinivasa Rao Pundru received the '**Scopus Index International Outstanding Researcher Award in Mechanical Engineering (Robotics) - 2025**' from Scopus Index Conclave on 23 September 2025.



**Prof Balachandran Ruthramurthy, FIE**  
Professor  
Department of Electronics and Communication Engineering, R.M.K. Engineering College, Kavaraipetti, Chennai  
✉ [rbc.ece@rmkec.ac.in](mailto:rbc.ece@rmkec.ac.in)

Prof Balachandran Ruthramurthy received the **Outstanding Engineer Award 2025** in recognition of his contributions in Electronics and Telecommunication Engineering Division on the occasion of 58th Engineers' Day from The Institution of Engineers (India) from Coimbatore Local Center on 15 September 2025.

## Know-Your-Member (KYM)

Is your mobile number & email updated with us ? If not, then please forward your **Know-Your-Member (KYM) form immediately to participate in the Elections of IEI from 2026** onwards.

You are requested to forward your KYM along with the self-attested copy of photo ID proof to the address given below:-

**Deputy Director (Membership)**  
The Institution of Engineers (India)  
8 Gokhale Road, Kolkata 700020  
Email: [datamemb@ieindia.org](mailto:datamemb@ieindia.org)

The form is available on IEI Website at <https://shorturl.at/8Q5tF> or **scan the code** below:



# Members in the News

Volume 10 | Issue 11 | November 2025



## Prof (Dr) Omkar Suresh Vaidya, MIE

Principal

MKSSS's Maharshi Karve Mahila Mahavidyalay, Wai, Dist. Satara, Maharashtra

✉ [omcar.vaidya@gmail.com](mailto:omcar.vaidya@gmail.com)

Prof (Dr) Omkar Suresh Vaidya received the **Certified Entrepreneurship Educator** certification from Wadhvani Foundation that signifies a high level of proficiency in entrepreneurship education, with core ability to train, inspire, and motivate innovation and entrepreneurship amongst students of higher education on 15 September 2025.



## Dr Ranjit Barua, MIE

Assistant Professor

OmDayal Group of Institutions, Howrah, West Bengal

✉ [ranjitjgec007@gmail.com](mailto:ranjitjgec007@gmail.com)

Dr Ranjit Barua won the **World's Top 2% Scientists Network** which connects with leading researchers and explore scientific excellence across disciplines in September 2025.

The following esteemed Corporate Members were conferred with the prestigious Professional Engineer (PE) Certificate from IEI after successful completion of the assessment process and they have been authorised to use the style and title of P Eng (I) by virtue of expertise in their field:



## Er Parvesh Deepan, MIE & PE7007915 (Certified Professional Engineer, IEI)

Senior Structural Engineer, ArchiStruc Inc., Rajasthan

Field : Civil Engineering

✉ [parveshdeepan007@gmail.com](mailto:parveshdeepan007@gmail.com)

Valid from: 18 October 2025

Valid up to: 31 October 2030



## 40<sup>th</sup> Indian Engineering Congress

19-21 December 2025

Theme

### Innovative Engineering Solutions for Viksit Bharat @ 2047

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Durgapur Local Centre

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# Members in the News

Volume 10 | Issue 11 | November 2025



**Er Dhavaleswar Rao Bhandaru**, MIE & PE7007928 (Certified Professional Engineer, IEI)  
Associate Professor, Vaagdevi Engineering College, Hyderabad  
Field : Civil Engineering  
✉ [eswar54@yahoo.com](mailto:eswar54@yahoo.com)  
Valid from: 18 October 2025  
Valid up to: 31 October 2030



**Er Prasanta Kumar Kundu**, FIE & PE7007936 (Certified Professional Engineer, IEI)  
Managing Director, M/s. Xplorer Consultancy Service Pvt. Ltd., Gurgaon  
Field : Civil Engineering  
✉ [pkkundu@xplorer.in](mailto:pkkundu@xplorer.in)  
Valid from: 18 October 2025  
Valid up to: 31 October 2030



**Er Soura Sarkar**, MIE & PE7007944 (Certified Professional Engineer, IEI)  
Assistant General Manager (Project Execution), ReNew Pvt. Ltd., Gurugram  
Field : Electrical Engineering  
✉ [soura.sarkar@gmail.com](mailto:soura.sarkar@gmail.com)  
Valid from: 18 October 2025  
Valid up to: 31 October 2030



**Er Biswanath Mukherjee**, FIE & PE7007952 (Certified Professional Engineer, IEI)  
Senior General Manager (Area Manager) Regional Head (East, North East, Bangladesh & Bhutan),  
Aimil Ltd., Kolkata  
Field : Electrical Engineering  
✉ [aimilbm@gmail.com](mailto:aimilbm@gmail.com)  
Valid from: 18 October 2025  
Valid up to: 31 October 2030



**Er Sagar Mahesh Kakani**, MIE & PE7007960 (Certified Professional Engineer, IEI)  
Manager, Godrej and Boyce Mfg. Co. Ltd., Mumbai  
Field : Metallurgical & Materials Engineering  
✉ [sagar.kakani@gmail.com](mailto:sagar.kakani@gmail.com)  
Valid from: 18 October 2025  
Valid up to: 31 October 2030

# Publication by Members

Volume 10 | Issue 11 | November 2025

## Book Chapter



**Mr S Valai Ganesh, MIE**

Assistant Professor (Senior Grade)

Department of Mechanical Engineering, Ramco Institute of Technology, Rajapalayam, Tamil Nadu

✉ [valaiganesh@ritrjpm.ac.in](mailto:valaiganesh@ritrjpm.ac.in)

### **Title of Book Chapter: Optimization of Plasma Spray Coatings Using the Taguchi Method and Machine Learning**

Chapter 14, Fabrication of Wear and Corrosion Resistant Materials, Taylor & Francis Group, CRC Press, Boca Raton, 1st Edition, 05 November 2025, e-ISBN: 9781003546528

**DOI:** <https://doi.org/10.1201/9781003546528-14>

**Co-authors:** S Maharajan & F Michael Thomas Rex

***Abstract:** It is essential to identify the optimum parameters with a minimum number of trials to efficiently enhance coating performance while minimizing cost and time. The present chapter focused on optimizing plasma spray process parameters to enhance the sliding wear resistance of austenitic stainless steel (SS316) coated with a ceramic composite powder, specifically a combination of 50 wt.% WC and 50 wt.% Cr<sub>3</sub>C<sub>2</sub>. The Taguchi L9 orthogonal array is employed in an experimental design to organize the structure of the design. The key process parameters considered are the current, powder feed rate, and standoff distance, which are changed at three different levels and comparing the effectiveness of Taguchi method against the random forest regression models. Pin-on-disc equipment with standard settings was used for the wear tests. The Taguchi approach determines the specific sliding wear rate as 0.028 mm<sup>3</sup>/N-km under optimal conditions, which is considerably lower than the wear rate of the other coated samples. Based on the predictions made using the optimal parameters identified by the Taguchi analysis, the random forest regression model provides the closest optimum conditions, with an estimated specific sliding wear rate of 0.041 mm<sup>3</sup>/N-km.*

## Professional Engineers (PE) Certification by IEI — A Pathway towards Success

Get the **Professional Engineers Certification** by IEI to enhance your knowledge, skill and competency and also elevate your career by becoming a member of an elite group of engineers.

### **Who can be a Professional Engineer —**

- Having Bachelor's in Engineering or equivalent recognized by Statutory Authority or Government of India;
- Having experience of at least 5 years in engineering practice.

### **Why become a Professional Engineer (PE) —**

- Improved career prospects and employability;
- Makes you suitable to attain higher levels of authority and responsibility;
- It is envisaged that in future, only a professional engineer would be empowered to prepare, sign, seal and submit engineering plans and drawings to a public authority for approval, or to seal engineering work for public and private clients;
- With growing economy and large scale expansion of infrastructure, the demand of PE certified engineers are expected to be much higher.

### **How to apply for Professional Engineers?**

The details are available on IEI Website

<https://shorturl.at/mRIYu>

or

**scan the code**



For any query and assistance, please send email to: [pe@ieindia.org](mailto:pe@ieindia.org) or contact (033) 40106275

# Publication by Members

Volume 10 | Issue 11 | November 2025

## Paper published in the Journals / Proceedings



**Dr Balachander K, MIE**  
Assistant professor (Sel. Grade)  
Sri Ramakrishna Engineering College, Coimbatore  
✉ [kaybe.ind@gmail.com](mailto:kaybe.ind@gmail.com)

### **Title of Paper: Nanotechnology Applications in Electric Vehicles: Boosting Energy Efficiency and Minimizing Environmental Impact**

Journal of Environmental Nanotechnology, Institute for Environmental NanoTechnology, 14(3), October 2025, pp 591-598, ISSN (Print): 2279-0748, ISSN (Online): 2319-5541

**DOI:** <https://doi.org/10.13074/jent.2025.09.2531631>

**Co-authors:** A Soundararajan, A Nagamani Prabu, S Vijayabaskar, K S Neelu Kumari & M Venkatesan

**Abstract:** *Electric Vehicles (EVs) have become a critical component in global strategies to combat climate change and reduce dependence on fossil fuels. Despite significant advances, EVs still face challenges related to energy storage, limited range, long charging times, and environmental sustainability. Nanotechnology, the science of manipulating materials at the atomic or molecular scale, presents innovative solutions to these challenges. This paper explores how nanotechnology enhances energy efficiency and reduces the environmental impact of EVs. It focuses on advances in battery technologies, lightweight nanomaterials, thermal management, and nanostructured power electronics. Furthermore, it critically assesses the environmental implications of using nanomaterials and provides a roadmap for future research.*

**Keywords:** *Nanotechnology; Electric Vehicle; Environmental Impact; Energy Efficiency*

*contd. to next page*

## Be Proud to be a Certified International Professional Engineers (IntPE) by IEI

### Who can apply for International Professional Engineers?

Basic Requirements for certification as International Professional Engineer

- ◎ Bachelor's Degree in Engineering or equivalent recognised by Statutory Authority or Government of India;
- ◎ Experience of 7 years in engineering practice. Out of 7 years of experience 2 years in a responsible position of significant engineering activity.

### How to apply for International Professional Engineers?

For details  
please visit the link:  
<https://shorturl.at/j36fo>  
or  
scan the code →



### Why become an International Professional Engineer ?

International Professional Engineer (Int.PE) Certification enables engineering professionals to advance their career aspiration in wide ranging ways.

- ◎ The International Professional Engineers, registered with IEI, may receive credit when seeking registration or licensure in the jurisdiction of another member, i.e, this will facilitate an engineer in mobility across member jurisdictions;
- ◎ Empowered by International Professional Engineers Agreement (IPEA), IEI maintains the Register of International Professional Engineers (IntPE) in India;
- ◎ 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.

For any query and assistance, please send email to: [pe@ieindia.org](mailto:pe@ieindia.org) or contact (033) 40106220

# Publication by Members

Volume 10 | Issue 11 | November 2025

contd. from previous page

## Title of Paper: Air-powered Innovation: Exploring the Future of Aluminium-Air Batteries

Journal of Environmental Nanotechnology, Institute for Environmental Nanotechnology, 14(3), 30 September 2025, pp 573-590, ISSN (Print): 2279-0748, ISSN (Online): 2319-5541

DOI: <https://doi.org/10.13074/jent.2025.09.2531618>

Co-authors: A Nagamani Prabu, L Yogapriya & K Somasundaram

**Abstract:** This review examines the development of aluminium-air (Al-Air) batteries, a promising alternative to traditional lithium-ion batteries, particularly in sustainable energy storage applications. Al-Air batteries offer significant advantages, including high energy density, low cost, and environmental friendliness, making them ideal for use in electric vehicles, grid infrastructure, and aerospace. The use of abundant and inexpensive aluminium as the anode further reduces production costs, while the eco-friendly nature of these batteries positions them as a greener alternative. However, despite their potential, Al-Air batteries face several challenges that hinder their commercial adoption. Anode corrosion, electrolyte degradation, and limited rechargeability are the primary obstacles. The aluminium anode degrades over time, reducing battery lifespan, and the electrolyte suffers from performance degradation with use. Additionally, the limited rechargeability of Al-Air batteries prevents them from being widely used in applications requiring frequent cycling, such as electric vehicles. Recent advancements in addressing these challenges have been made, including the development of hybrid systems, protective coatings for the anode, and improved electrolytes. Additionally, research into mechanical recharge solutions and enhancements to battery life holds promise for improving the practicality of Al-Air batteries. These advancements could lead to better integration with renewable energy systems and broader commercial adoption in the future.

**Keywords:** Al-Air Battery; Oxygen Reduction Reaction; Aluminium Anode Corrosion; Ionic Liquid Electrolyte; Mechanical Recharge

## Title of Paper: Power Quality Analysis of AC-DC Controlled Rectifiers Fed DC Separately Excited Motor Drive

Proceedings of 6th International Conference on Data Intelligence and Cognitive Informatics (ICDICI), IEEE Xplore, 02 September 2025, Electronic ISBN:979-8-3315-0313-0, DVD ISBN:979-8-3315-0312-3, Print on Demand(PoD) ISBN:979-8-3315-0314-7

DOI: <https://doi.org/10.1109/ICDICI66477.2025.11135258>

Co-authors: Soundarrajan A, Venkatesan M & Nagamani Prabhu A

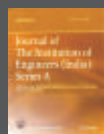
**Abstract:** The power quality analysis of a single phase different AC-DC controlled converter fed separately excited DC motor drive at different load and firing angle operating conditions is presented in this article using the MATLAB/Simulink software platform. In addition, the proportional integral (PI) controller is used to control the speed of the DC motor drive. The Ziegler Nicholas tuning method is used to obtain the PI controller parameters. This work considers single phase semi, full, and dual converters for this power quality analysis study. The output voltage, rms output voltage, distortion factor, displacement factor, power factor, output voltage/current ripple, and torque ripple are used to evaluate the performance of various converter fed DC drives with PI controllers. Finally, in power quality analysis, understand the impact of the controller and design for it.

**Keywords:** Dc Drive; Ac-Dc Drive; Pi Controller; Power Quality



## IEI-Springer Journals

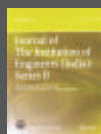
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22



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CiteScore 2024  
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Google Scholar: h5 Index 2023  
24



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ISSN Electronic 2250-0553

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ISSN Electronic 2250-2130

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CiteScore 2024  
2.5

Google Scholar: h5 Index 2023  
19



ISSN Print 2250-2483  
ISSN Electronic 2250-2491

Series E  
CiteScore 2024  
2.8

Google Scholar: h5 Index 2023  
11



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# Publication by Members

Volume 10 | Issue 11 | November 2025



**Dr Harish Kumar Khyani, MIE**

Guest Faculty

Electrical Engineering Department, MBM University, Jodhpur, Rajasthan

✉ [khyani.harish@gmail.com](mailto:khyani.harish@gmail.com)

## **Title of Paper: Development of Triple-diode based Generalized Model of Photovoltaic Module**

e-Prime - Advances in Electrical Engineering, Electronics and Energy, Elsevier, 12, June 2025, ISSN 2772-6711

**DOI:** <https://doi.org/10.1016/j.prime.2025.100964>

**Co-author:** Jayashri Vajpai

**Abstract:** The growing large-scale penetration of solar power plants into electric grids mandates accurate modelling of the photovoltaic modules with consideration of varying environmental conditions, resulting in the development of a large variety of models at photovoltaic cell, module and array levels.

A novel, scalable triple-diode based equivalent circuit model has been proposed in this paper and implemented on MATLAB/Simulink. This generalized model has the flexibility of representing double and single-diode models, with nine or lesser design parameters, by considering (or neglecting) recombination and diffusion losses, and representing different materials by corresponding values of band gap energy through a customized dialog box. Thus, this generalized model facilitates the implementation of nine different models and has the scalability for representing different photovoltaic plant ratings and flexibility of selecting different photovoltaic materials.

In order to validate the performance of proposed model, a well-known, commercial photovoltaic module has been simulated. The simulation results validated by comparison with the results reported in the published literature by the most widely referred practical models. The results obtained from all nine variants of the proposed model are at least in close agreement or better than other referred models, when compared at remarkable points with the manufacturer data sheets under standard test conditions, with modelling errors ranging from 0.2 to 7.31%

The scalability of the proposed generalized model is depicted by modelling a 100 kW photovoltaic array and validated through practical application of the single diode model to analyze the effect of rise of ambient temperature up to 50°C, representing hot climatic condition of the site of experimentation, Jodhpur, Rajasthan. The simulation results show that rise in temperature causes significant drop in output voltage in comparison with rise of current of photovoltaic array. Hence, the average output power reduces by 13.26% at maximum temperature. Thus, it is concluded that the proposed model is accurate, scalable and capable of correctly simulating the effect of rise of temperature on the performance of photovoltaic array.

**Keywords:** Generalized Model of Photovoltaic Module; Triple-Diode Model; Double-Diode Model; Single-Diode Model; MATLAB/Simulink based Modelling of Photovoltaic Systems; Simulation of PV Modules



**Dr Ramswaroop Mandolia, MIE**

Technical Assistant SG-I

Malaviya National Institute of Technology, Jaipur

✉ [mandoliaramswaroop@gmail.com](mailto:mandoliaramswaroop@gmail.com)

## **Title of Paper: Effect of Fine Aggregate Replacement with Limestone Slurry Waste in Self Compacting Concrete: A Microstructural Approach**

Materials Letters (SCIE), Elsevier, 381, 15 February 2025, Article 137779, ISSN: 0167-577X

**DOI:** <https://doi.org/10.1016/j.matlet.2024.137779>

**Co-authors:** Pawan Kalla, Ravindra Nagar & Jeetendra Singh Khichad

**Abstract:** The stone processing generated Dimensional Limestone Slurry Waste (DLSW) was used in Self-Compacting Concrete (SCC) to evaluate the compressive strength and analyze microstructure. X-Ray Fluorescence (XRF) and X-Ray Diffraction (XRD) analysis of DLSW was carried out, and its results revealed the presence of CaO (38.93 %) and SiO<sub>2</sub> (24.33%), which was associated with calcite and quartz. The rough, angular shape of particles, fineness, and presence of calcite of DLSW help to get optimum density and enhanced compressive strength at 28 days in modified SCC up to a 45% replacement level. The Mercury Intrusion Porosimetry (MIP), Scanning Electron Microscopy (SEM), Energy Dispersive Spectrometer (EDS) and Ultrasonic Pulse Velocity (UPV) analysis results support the improvement of compressive strength claims.

**Keywords:** Dimensional Limestone Slurry Waste; Self-Compacting Concrete; Microstructure; Superplasticizer

# Publication by Members

Volume 10 | Issue 11 | November 2025



**Mr S Valai Ganesh, MIE**

Assistant Professor (Senior Grade)

Department of Mechanical Engineering, Ramco Institute of Technology, Rajapalayam, Tamil Nadu

✉ [valaiganesh@ritrjpm.ac.in](mailto:valaiganesh@ritrjpm.ac.in)

## **Title of Paper: Exploring Sustainable Futures: Strategic Transitions in India's Urban Waste Scenario - A Comprehensive Review**

Environmental Engineering and Management Journal, "Gheorghe Asachi" Technical University of Iasi, Romania, 24(9), September 2025, pp 2099-2121, Print ISSN: 1582-9596, eISSN: 1843-3707

DOI: <http://doi.org/10.30638/eemj.2025.162>

**Co-authors:** Suresh Vaikuntam, Godwin Barnabas Solomon & Rajakarunakaran Sivaprakasam

**Abstract:** Municipal solid waste management (MSWM) is a major challenge in India because of rapid urbanization, population growth, and lifestyle changes. Through a systematic review of government reports, academic literature as well as case studies undertaken over the period 2000–2024, this comprehensive review analyses the current status, challenges and future prospects in MSWM used as a case study with an application of a multi-dimensional analysis framework to examine how we discarded the 'technical', 'institutional', 'financial' and 'social' aspects of waste management systems in Indian cities. According to research, India produces more than 150,000 tons of municipal solid refuse daily, of which only about 80% is collected and less than 30% is scientifically treated. Key results reveal critical gaps including: 50–75% staff shortage among urban local bodies, insufficiency of segregation at 18%, unsustainability of processing infrastructure treating 28% of collected waste, and 5–25% sustainable funding due to limited budget allocations by municipalities to invest in the sector. The study outlines the solutions, through identification of successful decentralized waste management models, public private partnerships and utilization of technology in cities with examples like Pune, Bengaluru and Indore. Priority interventions include integration of informal waste workers, implementation of user fees, extended producer responsibility, and smart technologies. Using an evidence based approach, this analysis provides a framework for policymakers and urban local bodies to create sustainable and equitable municipal solid waste management systems that align with the aspirations of the circular economy.

**Keywords:** Municipal Solid Waste; Public Private Partnerships; Smart Cities; Waste Collection; Waste-to-Energy



**Er Vivek Prasad H G, AMIE**

Assistant Professor

Sri Jayachamarajendra College of Engineering, JSS Science & Technology University, Karnataka

✉ [hgvprasad@jssstuniv.in](mailto:hgvprasad@jssstuniv.in), [vivekprasad22@gmail.com](mailto:vivekprasad22@gmail.com)

## **Title of Paper: Behavior of Interlocking Compressed Stabilized Earth Masonry under Flexure and Shear**

Innovative Infrastructure Solutions, Springer, 10(10), Article: 455, 08 September 2025, Electronic ISSN: 2364-4184, Print ISSN: 2364-4176

DOI: <https://doi.org/10.1007/s41062-025-02262-w>

**Co-authors:** D B Nirmala, Mangala Keshava & K S Jagadish

**Abstract:** Compressed Stabilized Earth Blocks (CSEBs) present economic and environmental advantages over traditional burnt clay bricks due to their lower embodied energy. This study investigates the structural performance of interlocking CSEBs, focusing on flexural and shear bond strengths under varying cement mortar (1:6) of joint thickness 12.5 mm, 5 mm, and dry-stacked (mortar less). A novel aspect of this research is the fabrication of interlocking-shaped blocks using conventional machinery and testing their performance. Three block types were evaluated: standard CSEBs (230 × 190 × 100 mm) and two interlocking variants (230 × 190 × 80 mm and 230 × 190 × 70 mm). The interlocking design significantly enhanced performance of masonry with a maximum flexural and shear strength of 0.54 MPa and 0.16 MPa, respectively, in B3-M1 configuration. Use of 20.4% of mortar improved flexural bond strength of masonry by 46% and shear strength by 23% compared to dry-stacking. The findings provide insights with regard to optimal combination of block geometry and joint configuration for structurally efficient, sustainable masonry. This work supports broader adoption of interlocking CSEBs by bridging critical knowledge gaps in masonry design.

**Keywords:** Compressed Stabilised Interlocking Earth Blocks; Mortar Joint Thickness; Flexural Strength; Shear Strength; Dry Stack Masonry

# Publication by Members

Volume 10 | Issue 11 | November 2025



**Dr Kirti Jalgaonkar, MIE**

Senior Scientist

ICAR-Central Institute for Research on Cotton Technology (ICAR-CIRCOT), Mumbai

✉ [jalgaonkar.kirti@gmail.com](mailto:jalgaonkar.kirti@gmail.com)

## **Title of Paper: Development of Activated Charcoal-Treated Polyester Cotton Blend Fabric for improving Pollutant Removal Efficiency**

Agriculture Association of Textile Chemical and Critical Reviews, Peer Journals, Belgium, Europe, 13(3), 25 May 2025, pp 59-66, ISSN: 3041-5683 (Online)

**DOI:** <https://doi.org/10.21276/AATCCReview.2025.13.03.59>

**Co-authors:** P Jagajanantha, Manoj Kumar Mahawar, Jyoti Dhakane-Lad, Sharmila Patil & Sheshrao Kautkar

**Abstract:** Air pollution has become a critical global issue, particularly in urban environments, due to the increasing prevalence of industrial activities and vehicular emissions. Conventional air filtration systems, although effective against particulate matter (PM), struggle to capture gaseous pollutants such as total volatile organic compounds (TVOCs) and CO, necessitating advanced filtration materials. Activated charcoal, with its high surface area and porous structure, is an effective adsorbent for both particulate and gaseous pollutants, making it a valuable component for air filtration technologies. In this study, the prime challenge was to optimize different parameters to enhance filtration efficiency without affecting the fabric's usability. Thereby, this study explored the enhancement of polyester-cotton (PC) blend fabric filtration efficiency by applying activated charcoal. Optimization of parameters, viz. activated charcoal concentration (1-5%), acrylic binder concentration (0-20%), and exhaustion time (5-40 minutes), resulted in a balance between filtration performance and fabric usability. The optimal conditions were found to be 3.5% activated charcoal, 10% acrylic binder, and 25 minutes of exhaustion time, yielding improvements in water contact angle (>135°), air permeability (10.75 ft<sup>3</sup>/min/ft<sup>2</sup>), and wetting time (3600s). The treated fabric exhibited significant improvements, achieving 17.75% enhancement in PM<sub>2.5</sub> filtration, 21.19% in PM<sub>10</sub>, 12% in CO<sub>2</sub> reduction, and an impressive 24.77% in TVOC removal. Additionally, the treated fabric demonstrated a 95% and 93% reduction in the growth of *Staphylococcus aureus* and *Klebsiella pneumoniae*, respectively. Overall, the study has resulted in the development of activated charcoal-treated PC fabric that offers a practical solution to the health risks posed by indoor air pollution while also offering antimicrobial properties, making it suitable for diverse applications in air purification and healthcare.

**Keywords:** Activated Charcoal; Air Filtration; Indoor Air Quality; Pad-Dry-Cure; Volatile Organic Compounds; Cotton; Nanoparticle; PM<sub>2.5</sub>; PM<sub>10</sub>; Air Permeability

## **Title of Paper: Application of Natural Plant Fibres in Development of Sustainable Concrete: A Review**

Journal of Scientific and Industrial Research, 84(8), CSIR-NISCAIR, 19 August 2025, pp 825-838, ISSN: 0022-4456, e-ISSN: 0975-1084

**DOI:** <https://doi.org/10.56042/jsir.v84i8.12276>

**Co-authors:** G Krishna Prasad, Manoj Kumar Mahawar, T Senthilkumar, Ajinath Dukare, Naveen Kumar Jha, Sharmila Patil, Jyoti Dhakane-Lad & P Jagajanantha

**Abstract:** Concrete is the most prevalent material used for construction purposes. The steel reinforcement is often done to provide tensile strength and ductility to the buildings. There are environmental concerns related to the manufacturing process of reinforced concrete structures, including carbon dioxide emission, alongside the problem of corrosion of the steel reinforcement. Natural plant fibers have gained significant attention in recent years as sustainable alternatives due to renewable, energy-efficient, improved flexural strength, reduced environmental impact, enhanced workability, cost effectiveness, aesthetic appeal, and compatibility with existing infrastructure. Utilization of natural fibres has limitations, including higher moisture absorption rate and hydrophilicity, which is correlated with a reduction in compressive, tensile, and flexural strength. In addition, long-term durability issues, viz., increased shrinkage and swelling, reduce the overall performance compared to the synthetic fiber-reinforced concrete. Despite these constraints, continued research efforts are aimed at overcoming these challenges through improved fiber treatments, modified concrete formulations, and enhanced construction practices to maximize the features of natural fibers in concrete applications. This review aims to present a comprehensive compilation of the utilization of natural fibres in the development of sustainable concrete.

**Keywords:** Concrete Applications; Environmental Impact; Fiber-Reinforcement; Reinforced Concrete; Sustainable Concrete

# Publication by Members

Volume 10 | Issue 11 | November 2025



**Dr Gaurab Kumar Ghosh, AMIE**

Assistant Professor

Indira Gandhi Institute of Technology, Sarang, Dhenkanal, Odisha

✉ [gaurab0112@gmail.com](mailto:gaurab0112@gmail.com), [gaurabghosh@igitsarang.ac.in](mailto:gaurabghosh@igitsarang.ac.in)

**Title of Paper: Comparative Measurement of Super-lubricity Behavior Elucidated by Hemm Gear Oil Based Nanolubricants Followed by Field Training on FZG Test Rig**

Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, Sage Journals, 23 July 2025, ISSN: 1350-6501, Online ISSN: 2041-305X

**DOI:** <https://doi.org/10.1177/13506501251361669>

**Co-authors:** Ankit Kotia, Niranjana Kumar, Subrata Kumar Ghosh & Sikta Panda

**Abstract:** This study investigates the lubricity characteristics of two nanoparticles, namely GnP (Graphene) and  $Al_2O_3$  (aluminum oxide), when used as nano-dispersants in industrial graded gear oil for heavy earth moving machinery (HEMM). Dual step approach was followed to synthesize the Nanolubricants. The stability of the samples was studied by different methods for better comprehension and further evaluation. The thermophysical, physicochemical and surface properties of the nanolubricants were measured following ASTM standards. The tribological characteristics of the samples were also evaluated experimentally. All the nanolubricant samples showed stable colloidal suspension. The addition of GnP and  $Al_2O_3$  to gear oil resulted in a 21% and 25 % reduction in the frictional force respectively. The metrics for estimating extreme pressure properties were recorded from a four-ball tester. The GnP based nanolubricants showed a higher improvement in non-seizure load and weld load respectively, over  $Al_2O_3$  based nanolubricants. Also, GnP exhibited an increase in seizure pressure (poz) of 34.44%, whereas the same effect with  $Al_2O_3$  showed 21.70 % increment. The mechanics for improved tribological behaviour with GnP involve a load bearing effect whereas  $Al_2O_3$  exhibits a ball bearing dominance when exposed to EP conditions. The nanolubricants significantly reduced motor torque and oil temperature when assessed on FZG test rig.

# Articles Published in Latest Issue of IEI Journals

Volume 10 | Issue 11 | November 2025



## Journal of The Institution of Engineers (India): Series C

[Aerospace, Marine, Mechanical & Production Engineering]

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### Volume 106, Issue 5, October 2025

- Title:** **Industrial Gas Turbine Compressor Cleaning: The Impact of Washing Frequency Schedule on the Effectiveness of Online Compressor Washing**
- Authors:** **Roupa Agbadede, Biweri Kainga & Isaiah Allison**  
Department of Electrical Engineering, Nigeria Maritime University, Okerenkoko Warri, Delta State, Nigeria  
Department of Mechanical Engineering, Nigeria Maritime University, Okerenkoko Warri, Delta State, Nigeria  
Headquarters, Nigeria Army Engineers, Bonny Cantonment, Victoria Island Lagos, Nigeria
- DOI:** <https://doi.org/10.1007/s40032-025-01187-8>
- Online Published date:** 04 July 2025
- Pages:** 1185–1195
- Title:** **Wave Runup and Reflection at Rubble Mound Breakwaters with BPPT-Lock Armor Layer**
- Authors:** **Rizaldi Caesar Yuniardi, Raka Firmansyah, Dinar Catur Istiyanto, Sungsang Urip Sujoko, Aris Subarkah, Suranto, M Zuhdan Jauzi, Affandy Hamid, Shafan Abdul Aziiz, Yofan Tahamano D. Harita, Ika Wulandari, Syahrizal Adri Latief & Haryo Dwito Armono**  
Research Center for Hydrodynamics Technology, National Research and Innovation Agency, Sukolilo, Surabaya, Jawa Timur, 60112, Indonesia  
Department of Ocean Engineering, Faculty of Marine Technology, Sepuluh Nopember Institute of Technology, Sukolilo, Surabaya, Jawa Timur, 60111, Indonesia
- DOI:** <https://doi.org/10.1007/s40032-025-01190-z>
- Online Published date:** 24 July 2025
- Page:** 1197–1213
- Title:** **An Experimental Study on Combustion and Vibration Characteristics of Dual-Fuel VCR Diesel Engine Integrated with Hydrogen Reactor**
- Authors:** **Shaik Subani, D. Vinay Kumar, T. CH. Anil Kumar & Shaik Farooq**  
Department of Mechanical Engineering, Vignan's Foundation for Science Technology and Research, Vadlamudi, Andhra Pradesh, 522213, India
- DOI:** <https://doi.org/10.1007/s40032-025-01194-9>
- Online Published date:** 26 July 2025
- Page:** 1215–1223
- Title:** **Performance of Fluid Pivot Journal Bearings Under Conditions of Load**
- Authors:** **Tuyen Vu Nguyen, Phan Van Tuan & Quang Dung Nguyen**  
Le Quy Don Technical University, 236 Hoang Quoc Viet Street, Bac Tu Liem, Hanoi, Vietnam
- DOI:** <https://doi.org/10.1007/s40032-025-01197-6>
- Online Published date:** 12 July 2025
- Pages:** 1225–1235
- Title:** **Development of Two New Airfoils for Micro-Capacity Wind Turbine Application**
- Authors:** **Minendra L. Surve, Prashant D. Deshmukh, Kailasnath B. Sutar, Bharatbhushan S. Kale, Satish M. Silaskar & Kiran Suresh Bhole**  
Datta Meghe College of Engineering, Navi Mumbai, 400708, India

# Articles Published in Latest Issue of IEI Journals

Volume 10 | Issue 11 | November 2025

Bharati Vidyapeeth (Deemed to be University), College of Engineering, Pune-Satara Road, Dhankawadi, Pune, 411043, India  
Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai, 400703, India  
New Horizon Institute of Technology and Management, Thane, 400615, India  
Sardar Patel College of Engineering, Andheri, Mumbai, 400058, India

DOI: <https://doi.org/10.1007/s40032-025-01198-5>

Online Published date: 05 July 2025

Pages: 1237–1254

Title: **A Novel Method to Investigate the Effect of Cracks on the Pull-In Area in MEMS Using High-Frequency Excitation**

Authors: **Jianhua Dai & Li Mao**

Jiangsu Research and Development Center of Application Technology for Wireless Sensing System, Wuxi, 214153, China

Wuxi Vocational Institute of Commerce, Wuxi, 214153, China

DOI: <https://doi.org/10.1007/s40032-025-01200-0>

Online Published date: 11 July 2025

Pages: 1255–1265

Title: **Optimization Design and Experimental Study of Precise Magnetic Grinding Magnetic Pole Device for Inner Surface of Aircraft Engine Bend Pipe**

Authors: **Xiao Chun-Fang, Han Bing & Xie Zhen**

Hunan Aircraft Maintenance Engineering Technology Research Center, Changsha Aeronautical Vocational and Technical College, Changsha, Hunan, 410124, China

School of Mechanical Engineering and Automation, University of Science and Technology Liaoning, Anshan, Liaoning, 114051, China

Sheet Metal Factory of AVIC Chengdu Engine Co.,Ltd, Chengdu, Sichuan, 610503, China

DOI: <https://doi.org/10.1007/s40032-025-01202-y>

Online Published date: 16 July 2025

Pages: 1267–1280

Title: **Optimization of Process Parameters of Novel Hybrid Automotive Battery Cooling System using GRA-Taguchi and Heatmap Visualization**

Authors: **Himanshu Sharma, Gaurav Saxena, R. S. Rajput & Ravindra Randa**

Department of Mechanical Engineering, University Institute of Technology, Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal, Madhya Pradesh, 462033, India

Department of Automobile Engineering, RJIT BSF Academy, Tekanpur Gwalior, Madhya Pradesh, 475005, India

DOI: <https://doi.org/10.1007/s40032-025-01204-w>

Online Published date: 11 July 2025

Pages: 1281–1303

Title: **Experimental Assessment of Four different materials Cooling Pads in DECS and Their Impact on Refrigerant Condenser Cooling: A Comparative Analysis**

Authors: **R. S. N. Sahai & Umair M. Momin**

Mechanical Engineering, Department of General Engineering, Institute of Chemical Technology, Mumbai, Maharashtra, 400019, India

DOI: <https://doi.org/10.1007/s40032-025-01206-8>

Online published date: 05 July 2025

Pages: 1305–1321

Title: **Enhancing Emulsion Stability: A Novel Shape Design Approach for Barbell Horns Using the Equilibrium Optimization Algorithm**

Authors: **Davood Mirzaei, Mohammadrasoul Asgari, Abbas-Ali Zamani & Aminollah Masoumi**

Department of Biosystems Engineering, College of Agriculture, Isfahan University of Technology, Isfahan, 84156-83111, Iran

# Articles Published in Latest Issue of IEI Journals

Volume 10 | Issue 11 | November 2025

Department of Electrical Engineering, National University of Skills (NUS), Tehran, Iran  
Department of Electrical Engineering, Technical and Vocational University (TVU), Tehran, Iran  
DOI: <https://doi.org/10.1007/s40032-025-01207-7>

Online published date: 07 July 2025  
Pages: 1323–1334

Title: **Research on the Internal Financial Management of Catering Enterprises Through Accounting in Blockchain Technology**

Authors: **Jing Pan & Xiang Li**  
School of Economics and Management, Sichuan Tourism University, Chengdu, Sichuan, 610100, China  
Key Laboratory of Sichuan Cuisine Artificial Intelligence, Sichuan Tourism University, No. 459, Hongling Road, Longquanyi District, Chengdu, Sichuan, 610100, China

DOI: <https://doi.org/10.1007/s40032-025-01209-5>  
Online published date: 11 July 2025  
Pages: 1335–1340

Title: **Hydrodynamic Interaction Between a Linear Water Wave and a Floating Structure Near a Vertical Wall by Using an Exact Neumann-to-Dirichlet (NtD) Boundary Condition**

Authors: **Un-Ryong Rim, Chong-Song Paek & Min Hyok Jon**  
Institute of Ocean Engineering, Kim Chaek University of Technology, Pyongyang, Democratic People's Republic of Korea  
Faculty of Electronics and Information, Pyongyang University of Computer Technology, Pyongyang, Democratic People's Republic of Korea  
Faculty of Naval Architecture and Ocean Engineering, Kim Chaek University of Technology, Pyongyang, Democratic People's Republic of Korea

DOI: <https://doi.org/10.1007/s40032-025-01211-x>  
Online published date: 05 July 2025  
Pages: 1341–1352

Title: **Design and Development of Novel Oxygen Concentrator using Pressure Swing Adsorption Technique**

Authors: **Swapnil Vyavahare, Vishal Naranje, Yashawant Chapke, Ruchira Tare, Avinash Badadhe & Dinesh Washimkar**  
Department of Automation and Robotics, JSPM's Rajarshi Shahu College of Engineering, Pune, 411033, India

School of Engineering, Architecture and Design, Amity University, Dubai, Dubai, UAE  
Department of Computer Engineering, Bharati Vidyapeeth Deemed to be University College of Engineering, Pune, India  
Department of Mechanical Engineering, Vishwakarma Institute of Technology, Pune, India

DOI: <https://doi.org/10.1007/s40032-025-01212-w>  
Online published date: 04 July 2025  
Pages: 1353–1366

Title: **Project Time Control by Considering Earned Risk and Duration Under Uncertainty Conditions**

Authors: **Nazanin Zahra Dashtaki, Fatemeh Tohidi, Yeganeh Bahmani Mahbod & Mohammad Amin Maftoon**  
Department of Industrial Engineering, Karaj Branch Islamic Azad University, Karaj, Iran  
Department of Industrial Engineering, West Tehran Branch Islamic Azad University, West Tehran, Iran  
Department of Industrial Engineering, North Tehran Branch Islamic Azad University, North Tehran, Iran

DOI: <https://doi.org/10.1007/s40032-025-01214-8>  
Online published date: 05 August 2025  
Pages: 1367–1392

Title: **Optimization Control Method of Production Cost of Nano-Ceramics**

Author: **Honghong Wu**  
Department of Economics and Management, Chizhou Vocational and Technical College, Chizhou, 247000, China

DOI: <https://doi.org/10.1007/s40032-025-01215-7>

# Articles Published in Latest Issue of IEI Journals

Volume 10 | Issue 11 | November 2025

- Online published date: 11 July 2025  
Pages: 1393–1403  
Title: **Experimental and Numerical Investigation on Compressive Behavior of Polymeric Cell Foam Structures**  
Authors: **Avinash, Mohammad Mursaleen & Navin Kumar**  
Department of Mechanical Engineering, National Institute of Technology Srinagar, Srinagar, J&K, 190006, India  
Department of Mechanical Engineering, Indian Institute of Technology Ropar, Ropar, Punjab, 140001, India  
DOI: <https://doi.org/10.1007/s40032-025-01217-5>  
Online published date: 11 July 2025  
Pages: 1405–1416  
Title: **Research on Precision Marketing for Market Consumer Groups by Using Consumer Portraits**  
Author: **Xiaodong Yang**  
School of Mechanical and Vehicle Engineering, Bengbu University, Bengbu, Anhui, 233030, China  
DOI: <https://doi.org/10.1007/s40032-025-01225-5>  
Online published date: 11 July 2025  
Pages: 1417–1424  
Title: **Prediction of Performance Parameters of Journal Bearing Using Machine Learning Algorithms**  
Authors: **Yashna Nagpal, Arushi Gupta, Tisha Satija, Gauri Maheshwari & Shipra Aggarwal**  
Department of Mechanical and Automation Engineering, Indira Gandhi Delhi Technical University for Women, Delhi, India  
DOI: <https://doi.org/10.1007/s40032-025-01226-4>  
Online published date: 05 July 2025  
Pages: 1425–1437  
Title: **Color Extraction and Artistic Matching Design Based on Silhouette Coefficient Method and Eye Tracking Technology**  
Authors: **Xiaoyuan Zhang & Le Li**  
Faculty of Humanities and Social Sciences, Udon Thani Rajabhat University, Udon Thani, 41000, Thailand  
Faculty of Media and Design, Nantong Institute of Technology, Nantong, 226001, China  
DOI: <https://doi.org/10.1007/s40032-025-01229-1>  
Online published date: 18 July 2025  
Pages: 1439–1454  
Title: **Design and Dynamic Analysis of Metal Matrix Composite-Based Disc Brake Pads for Formula Cars**  
Authors: **Anand Pai, Vineet Maheshwari, S. V. Shivaditya, Ravindra Mallya & Satish Shenoy Baloor**  
Department of Aeronautical and Automobile Engineering, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal, Karnataka, 576104, India  
DOI: <https://doi.org/10.1007/s40032-025-01231-7>  
Online published date: 07 July 2025  
Pages: 1455–1467  
Title: **The Impact of Augmented Reality Marketing on Customer Engagement: A Comprehensive Analysis of Social Media Metrics**  
Authors: **Soumyajit Das & Prachi Narayan**  
Department of Industrial and Management Engineering, Indian Institute of Technology, Kanpur, 208016, Uttar Pradesh, India  
DOI: <https://doi.org/10.1007/s40032-025-01234-4>  
Online published date: 15 July 2025  
Pages: 1469–1482  
Title: **Application of Combination of Digital Twin and Machine Learning in Production System Optimization**  
Authors: **Jiaqiang Wang, Dingzhen Zhang, Rengui Ma & Xiaojing Liu**

# Articles Published in Latest Issue of IEI Journals

Volume 10 | Issue 11 | November 2025

College of Smart Energy, Shanghai Jiao Tong University, Shanghai, 200240, China  
Shandong Nuclear Power Company Ltd., Ltd, Yantai, 265100, Shandong, China

DOI: <https://doi.org/10.1007/s40032-025-01236-2>

Online published date: 02 September 2025

Pages: 1483–1493

Title: **Applying Machine Learning Concepts for Forecasting Energy Consumption in the Frozen Food Production Process**

Authors: **Thawanrat Sumrit, Chanawat Nitatwichit, Somkiat Jaturonglumlert & Jaturapatr Varith**

Graduate Program in Food Engineering, Faculty of Engineering and Agro-Industry, Maejo University, 63 Moo 4, Nong Han Subdistrict, San Sai District, Chiang Mai, 50290, Thailand

Department of Food Engineering, Faculty of Food and Agricultural Technology, Pibulsongkram Rajabhat University, 156 Moo 5, Plai Chumphon Subdistrict, Mueang Phitsanulok, Phitsanulok, 65000, Thailand

DOI: <https://doi.org/10.1007/s40032-025-01238-0>

Online published date: 30 July 2025

Pages: 1495–1510

Title: **On the Development of Polylactic Acid-Stubble Waste Composite Filament for Rapid Tooling Applications**

Authors: **Minhaz Husain, Rupinder Singh, Ranvijay Kumar, Vinay Kumar & Nishant Ranjan**

Marwadi University Research Center, Department of Mechanical Engineering, Faculty of Engineering & Technology, Marwadi University, Rajkot, India

Mechanical Engineering Department, National Institute of Technical Teachers Training and Research, Chandigarh, India

University Center for Research and Development, Chandigarh University, Mohali, India

DOI: <https://doi.org/10.1007/s40032-025-01240-6>

Online published date: 31 July 2025

Pages: 1511–1523

Title: **Optimizing Biogas Production Through Co-Digestion of Kitchen Waste and Chicken Litter: Design, Operation, and Economic Feasibility of a Thermophilic Biodigester**

Authors: **K. S. Murulidhar, B. Puttabore Gowda, R. Chandrashekar, P. M. Suresh, K. Punith Gowda & H. M. Mallaradhya**

Ramaiah Institute of Technology (Affiliated to Visveswaraya Technological University, Belagavi), MSR Nagar, Bengaluru, 560054, Karnataka, India

Sambhram Institute of Technology, Bengaluru (Affiliated to Visveswaraya Technological University, Belagavi), Bengaluru, Karnataka, India

Vivekananda Institute of Technology (Affiliated to Visveswaraya Technological University, Belagavi), Bengaluru, Karnataka, India

East West Institute of Technology (Affiliated to Visveswaraya Technological University, Belagavi), Magadi Main Road, Bengaluru, 560091, Karnataka, India

M S Ramaiah University of Applied Sciences, Bangalore, India

DOI: <https://doi.org/10.1007/s40032-025-01241-5>

Online published date: 31 July 2025

Pages: 1525–1539

Title: **Role of Pulse-Duration in Characterization of Surface Integrity in High Speed EDM of AISI D3 Steel**

Authors: **Mukesh Kumar, Vipin & Mohammad Sakib Perwez Khan**

Department of Mechanical Engineering, CCET-Degree Wing, Chandigarh, 160019, India

Department of Mechanical Engineering, Delhi Technological University, Delhi, 110042, India

Department of Civil Engineering, CCET-Degree Wing, Chandigarh, 160019, India

DOI: <https://doi.org/10.1007/s40032-025-01242-4>

Online published date: 01 September 2025

Pages: 1541–1549

Title: **Implementation of Maynard Operation Sequence Technique in an Engine Manufacturing Industry: A**

# Articles Published in Latest Issue of IEI Journals

Volume 10 | Issue 11 | November 2025

## Case Study

- Authors: **Bipandeep Singh, Jagdeep Singh, Harnam Singh Farwaha, Prem Singh & Nishant Ranjan**  
Department of Mechanical and Production Engineering, Guru Nanak Dev Engineering College, Ludhiana, Punjab, 141006, India  
Faculty of Mechanical Engineering, Marwadi University Research Center, Marwadi University, Rajkot, Gujarat, 360003, India
- DOI: <https://doi.org/10.1007/s40032-025-01243-3>  
Online published date: 12 August 2025  
Pages: 1551–1559
- Title: **Fracture Behavior of Titanium Alloy Cranial Implants Additively Manufactured Using Laser Powder Bed Fusion Under Coupled Thermomechanical Loading**
- Authors: **Altaf Ahmad Lone, Nazir Ahmad Sheikh, Mohammad Mursaleen Butt & R. T. Durai Prabhakaran**  
Composite Materials and Mechanics Laboratory, Department of Mechanical Engineering, Indian Institute of Technology Jammu, Jammu, India  
Advanced Computational Mechanics Laboratory, NIT Srinagar, Srinagar, India
- DOI: <https://doi.org/10.1007/s40032-025-01245-1>  
Online published date: 30 July 2025  
Pages: 1561–1577
- Title: **A User-centred Hybrid Framework for Material Selection Using QFD, TOPSIS, Entropy Validated Using Sensitivity Analysis**
- Authors: **P. Krishna Murthy, CH. Murali, K. Sai Kiran, K. G. Durga Prasad & P. Chetan Reddy**  
Department of Mechanical Engineering, Engineering and Technology Program, GVP College for Degree and P.G.Courses (A), Visakhapatnam, Andhra Pradesh, India  
Department of Mechanical Engineering, Vignan Institute of Information Technology (A), Visakhapatnam, Andhra Pradesh, India
- DOI: <https://doi.org/10.1007/s40032-025-01247-z>  
Online published date: 10 September 2025  
Pages: 1579–1592
- Title: **Design, Analysis and Testing of Ankle Foot Orthoses (AFOs) Made of Synthetic Fibre Reinforced 3D Printed Polymer Composites**
- Authors: **Ved Sudhir Shetty, Vasisht S. Iyer, M. S. Sai Darshan, Pramuk Dinesh & K. S. Srinivasa Prasad**  
Department of Mechanical Engineering, PES University, Bangalore, 560 085, Karnataka, India
- DOI: <https://doi.org/10.1007/s40032-025-01248-y>  
Online published date: 10 September 2025  
Pages: 1593–1600
- Title: **Enhancing Drilling Fluid Filtration with Novel Swarm-Intelligent Adaptive XGBoosting-Based Analysis of Nanoparticles**
- Authors: **G. Shanmugasundar, Prasun Dutta, Jasgurpreet Singh Chohan, B. Swarna & Elangovan Muniyandy**  
Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Chennai, 600044, India  
Department of Mechanical Engineering, SR University, Warangal, 506371, India  
Marwadi University Research Center, Department of Mechanical Engineering, Faculty of Engineering & Technology, Marwadi University, 360003, Rajkot, India  
Faculty of Engineering, Sohar University, Sohar, Oman  
University Centre for Research & Development, Chandigarh University, Mohali, 140413, India  
Department of Biosciences, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai, 602 105, India  
Applied Science Research Center, Applied Science Private University, Amman, Jordan
- DOI: <https://doi.org/10.1007/s40032-025-01249-x>  
Online published date: 10 September 2025  
Pages: 1601–1610
- Title: **A Novel Approach for Analyzing and Calculating Angles on Single Point Cutting Tools Using**

# Articles Published in Latest Issue of IEI Journals

Volume 10 | Issue 11 | November 2025

## **Geometric Algebra**

Authors: **Long-Vinh Bui & Manh-Chien Nguyen**  
School of Mechanical Engineering, Hanoi University of Science and Technology, 01 Dai Co Viet Rd., Hanoi, 11615, Vietnam  
DOI: <https://doi.org/10.1007/s40032-025-01256-y>  
Online published date: 10 September 2025  
Pages: 1611–1620

Title: **Identification and Mitigation of Tunnel Defects in Friction Stir Welding of Dissimilar Aluminum Alloys- AA 6082-T6 and AA 6061-T6**

Authors: **Ramprasad Ganesan & Hema Pothur**  
Department of Mechanical Engineering, S.V.U. College of Engineering, Sri Venkateswara University, Tirupati, 517502, Andhra Pradesh, India  
DOI: <https://doi.org/10.1007/s40032-025-01257-x>  
Online published date: 10 September 2025  
Pages: 1621–1633

Title: **Dynamics, Contact Model and Control Methodology for Peripheral Spacecraft Docking System: A Simulation-Based Survey**

Authors: **Saurabhkumar H. Patel, Sourav Rakshit & Shamrao Garur**  
Mechanical Engineering Department, Indian Institute of Technology Madras, Chennai, 600036, Tamilnadu, India  
Spacecraft Mechanisms Group, U R Rao Satellite Centre, Bengaluru, 560017, Karnataka, India  
DOI: <https://doi.org/10.1007/s40032-025-01208-6>  
Online published date: 10 July 2025  
Pages: 1635–1658

Title: **Need for a Smart Autonomous Bilge Management System: A Review**

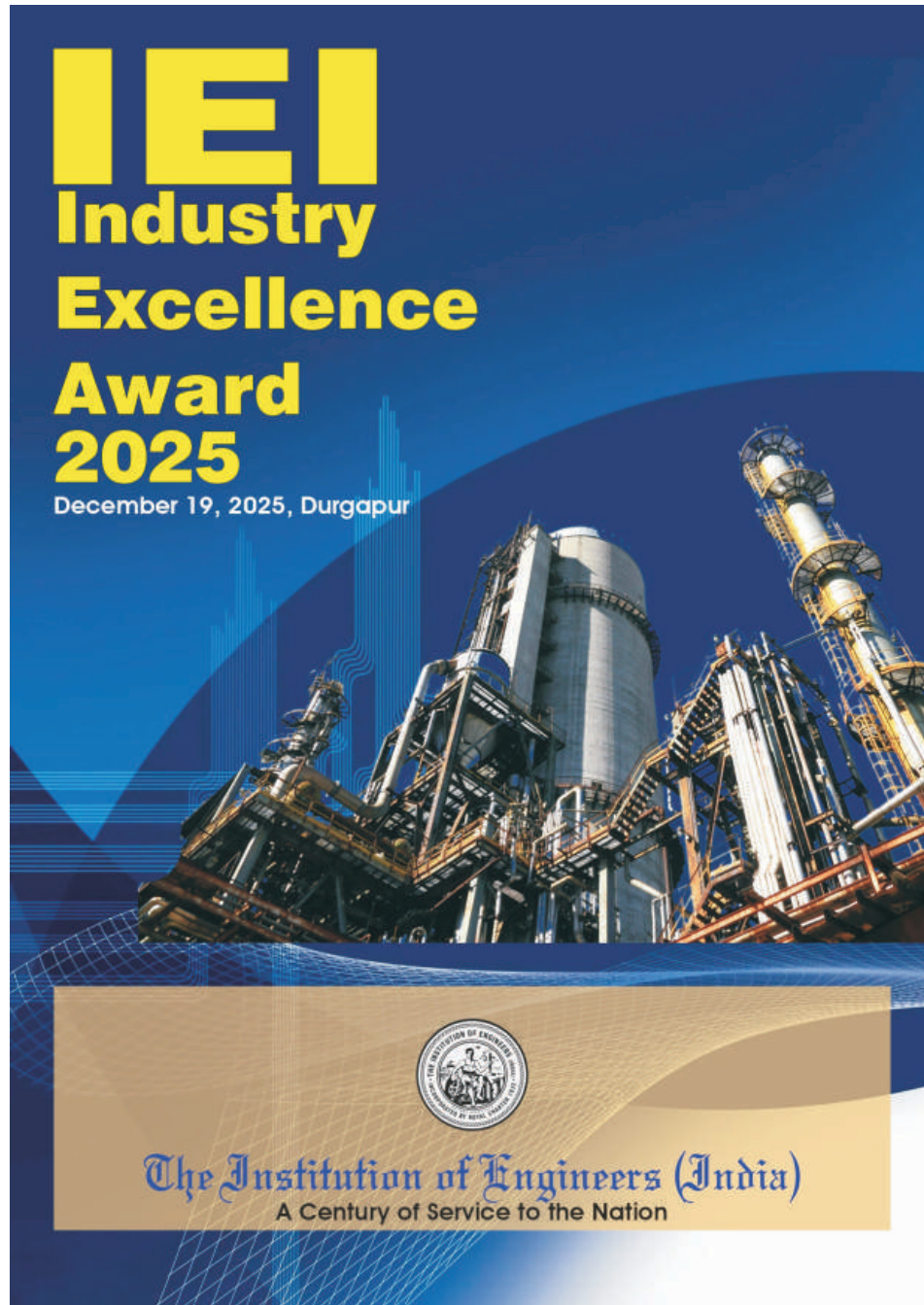
Authors: **Shishir Dutt & Sanjeet Kanungo**  
School of Marine Engineering, Indian Maritime University, East Coast Road, Chennai, India  
Marine Engineering, Tolani Maritime Institute, Talegaon-Chakan Road, Induri, Pune, India  
DOI: <https://doi.org/10.1007/s40032-025-01237-1>  
Online published date: 07 July 2025  
Pages: 1659–1673

Title: **Effect of Overall Equipment Effectiveness on Performance of Indian Sugar Industry: A Case Study**

Authors: **Sandeep Singh & Davinder Singh**  
Department of Mechanical Engineering, Khalsa College of Engineering and Technology, Amritsar, Punjab, India  
Department of Mechanical Engineering, Punjabi University, Patiala, Punjab, India  
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# Announcements on IEI Industry Excellence Award 2025

Volume 10 | Issue 11 | November 2025



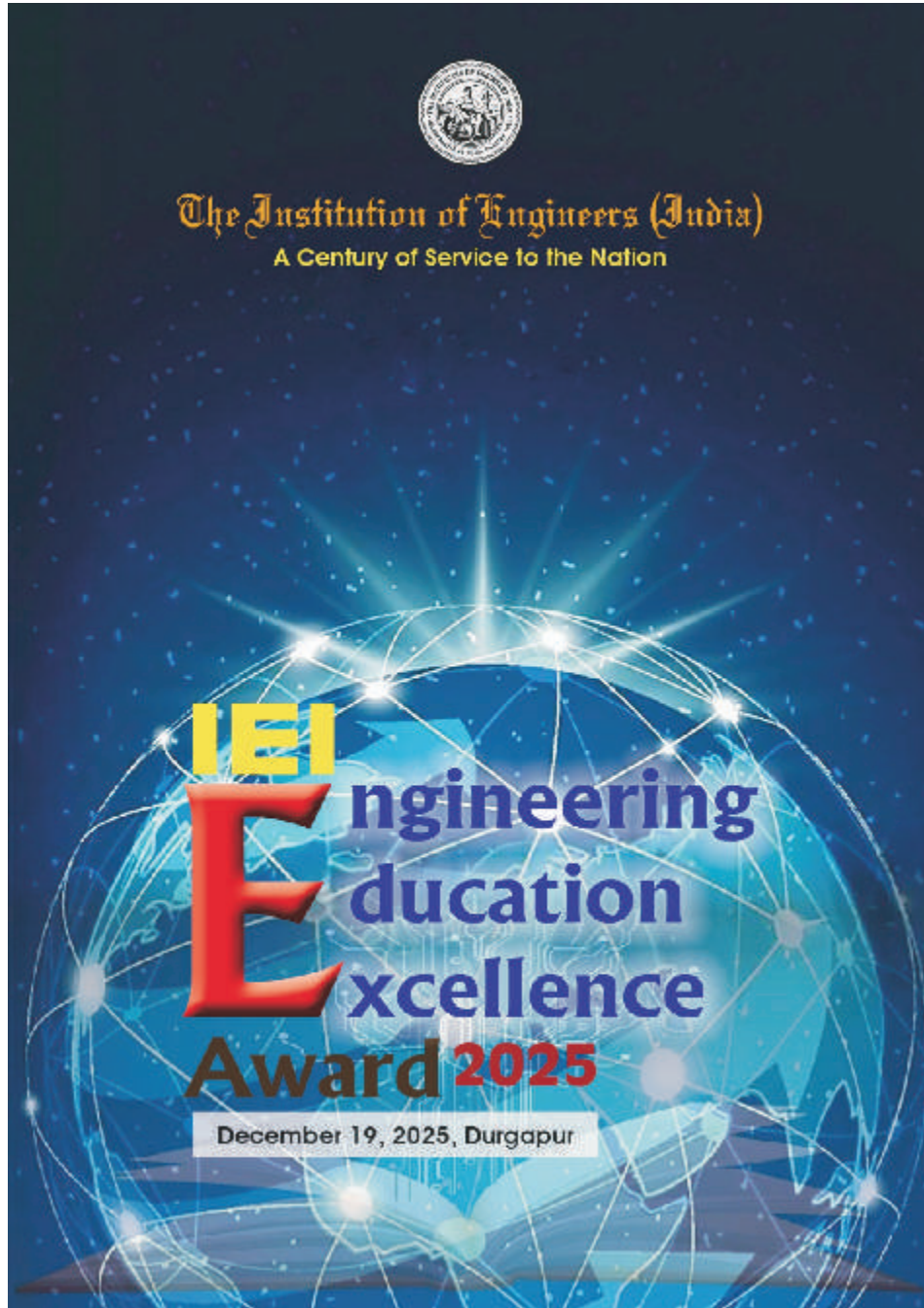
For details, please click here: <https://shorturl.at/bDnwX>

## Corporate Air Ticketing for IEI Members

Corporate Members may book Corporate Air Tickets through M/s EBIX Travels Private Ltd. For details please visit <https://www.ieindia.org/webui/IEI-AirTickets.html>

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For details, please click here: <https://shorturl.at/HWRWY>

## Discount at the Samsung e-store for IEI Corporate Members

Exclusive access to the Samsung e-store for IEI Corporate Members. This shall enable the Corporate Members to procure the Samsung Products at a discounted rate. The Samsung e-store can be accessed at [www.samsung.com/in/multistore/iei](http://www.samsung.com/in/multistore/iei) using your Membership No. and email id / Mobile number.

# Nota Bene

Volume 10 | Issue 11 | November 2025

We would like to thank our erudite members for sharing their professional achievements through the IEI Epitome and making the content more abounding and at the same time inspiring many others to share their accomplishments as well. To streamline the process and make it convenient for the member to give their inputs we would like to obtain the information in a more structured and comprehensive manner. We would request our members to send the details of their achievements as per the appended formats only.

## FORMAT FOR ACHIEVEMENT BY MEMBERS

A passport size  
color photograph  
(scanned image)

(i) Prefix (Er/Dr/Prof)	
(ii) First Name	
(iii) Middle Name (if any)	
(iv) Surname (Last Name)	
(v) Email and Mobile Number	
(vi) Designation	
(vii) Organization of affiliation	
(viii) Membership No (please use the prefix F/M/AM as the case may be)	
(ix) Details of Award/Achievement#	
(x) Month & Year of Achievement/ Date of Achievement	
(xi) Supporting Documents/links [which are clearly indicative of the incumbent's achievement(s)]	

*#Reporting of Award of stipend/fellowship at PG/PhD level and awards from esoteric events/communities may be avoided*

# Nota Bene

Volume 10 | Issue 11 | November 2025

## FORMAT FOR PATENT / DESIGNS / TRADE MARKS / GEOGRAPHICAL INDICATIONS BY MEMBERS

A passport size  
color photograph  
(scanned image)

(i) Prefix (Er/Dr/Prof)	
(ii) First Name	
(iii) Middle Name (if any)	
(iv) Surname (Last Name)	
(v) Email and Mobile Number	
(vi) Designation	
(vii) Organization of affiliation	
(viii) Membership No (please use the prefix F/M/AM as the case may be)	
(ix) Tick the appropriate BOX	<input type="checkbox"/> Patent <input type="checkbox"/> Designs <input type="checkbox"/> Trade Marks <input type="checkbox"/> Geographical Indications
(x) Issuing Authority	
(xi) Serial No	
(xii) Patent No	
(xiii) Date of filing (DD/MM/YYYY)	
(xiv) Date of Grant (DD/MM/YYYY)*	
(xv) Patentee	
(xvi) Details of Patent	
(xvii) Term for which the above (ix) has been granted	

\* Copy of Certificate of the Grant of Patent

# Nota Bene

Volume 10 | Issue 11 | November 2025

## FORMAT FOR PUBLICATION(S) BY MEMBERS — PAPERS

A passport size  
color photograph  
(scanned image)

(i) Prefix (Er/Dr/Prof)	
(ii) First Name	
(iii) Middle Name (if any)	
(iv) Surname (Last Name)	
(v) Email and Mobile Number	
(vi) Designation	
(vii) Organization of affiliation	
(viii) Membership No (please use the prefix F/M/AM as the case may be)	
(ix) Title of Paper	
(x) Name of Journal/Proceeding/Technical Volume	
(xi) Volume No (Not required for Indian Engineering Congress)	
(xii) Issue No (Not required for Indian Engineering Congress/Annual Technical Volumes of IEI)	
(xiii) Theme (Only for Technical Volumes of IEI)	
(xiv) DOI: (Not required for Indian Engineering Congress/Annual Technical Volumes of IEI)	
(xv) ISSN	
(xvi) Date of Publication (Date-Month-Year)	
(xvii) Co-authors (if any)	
(xviii) Abstract in full	
(xix) 5/6 Keywords	
(xx) Supporting Documents/links [which are clearly indicative of the incumbent's achievement(s)]	

*Note: Publications in local seminar, conference and symposia will not be accounted*

# Nota Bene

Volume 10 | Issue 11 | November 2025

## FORMAT FOR PUBLICATION(S) BY MEMBERS — BOOKS/ BOOK CHAPTERS

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color photograph  
(scanned image)

(i) Prefix (Er/Dr/Prof)	
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(iii) Middle Name (if any)	
(iv) Surname (Last Name)	
(v) Email and Mobile Number	
(vi) Designation	
(vii) Organization of affiliation	
(viii) Membership No (please use the prefix F/M/AM as the case may be)	
(ix) Title of Book	
(x) Title of Book Chapter	
(xi) Book Chapter Number	
(xii) Publisher Details	
(xiii) ISBN	
(xiv) Date of Publication (Date-Month-Year)	
(xv) Co-authors (if any)	
(xvi) About the book (100-150 words)	
(xvii) Supporting Documents (complimentary copies for IEI Headquarters)/links [which are clearly indicative of the incumbent's achievement(s)]	

*Note: Accommodate works published in journals/reputed conference proceedings/books for the last one year*

# Notification for Advertisement in IEI Epitome

Volume 10 | Issue 11 | November 2025

The Institution of Engineers (India) reserves a coveted privilege in being the largest multi-disciplinary professional body of engineers encompassing 15 engineering disciplines with a Corporate membership of over 2.59 lakhs maintaining a national/international presence through hundred twenty four Centres and six Overseas Chapters, Fora and Organ (Engineering Staff College of India). The Institution has been disseminating the various information through IEI Epitome and other publications.

We would like to share with you that we are now providing the facility to advertise engineering / technical products/services, information brochures, recruitment notices etc. in our official publication portal IEI Epitome (12 issues - 196000 reach online). Besides, IEI Epitome is also uploaded on our website ([www.ieindia.org](http://www.ieindia.org)) on a monthly basis and is accessible to all free of cost. Given its immense footprint in the engineering and technical diaspora spanning the globe, IEI with its distinguished heritage of a century provides you the ideal portal to connect with the National and International Engineering and Technical Community at very competitive rates. We invite you to take this unique and privileged opportunity to advertise and communicate your service and product portfolios under our prestigious banner and make us your brand emissaries in your promotional campaigns.

The booking form containing details of each publication, rates for the advertisements and the advertisement form are appended below.

## BOOKING FORM

Publication	Description	Type	Rate (Rs.) including GST	Number of Issues / Volumes	Total (Rs.) including GST
IEI Epitome	Inside Full Page	Colour	30,000		
	Inside Half Page	Colour	15,000		
	Inside Quarter Page	Colour	8,000		

Less discount\* @ .....%

Total Cost of Advertisement

★ 5% discount for advertisement in 6 consecutive issues of IEI Epitome

★ 10% discount for advertisement in 12 consecutive issues of IEI Epitome

Payments to be made by Cheques / Drafts drawn in favour of "The Institution of Engineers (India)".

Cheque / Draft No. .... Drawn on .....

Date: .....

Mobile No. ....

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GSTIN: .....

Signature with seal

\* Payment can also be done Online through our website: [www.ieindia.org](http://www.ieindia.org), details of which will be provided at the time of Payment.



## Engineering Staff College of India

Autonomous Organ of The Institution of Engineers (India)  
 (IMS [ISO 9001:2015, ISO 14001:2015, ISO 50001:2018, ISO 45001:2018]  
 ISO/IEC 17025:2017 Certified, AICTE & CEA Recognized Institution)

### Continuing Professional Development Programmes (CPDP) for the Month of December 2025

Sl. No.	Name of the Course	Scheduled Dates
1.	IT Tools & Techniques for Office Administration	01 - 03 Dec 25
2.	Surface Engineering – Concepts, Applications and Emerging Technologies	01 – 04 Dec 25
3.	NDT Level II Certification in Visual Inspection/Visual Testing (in Accordance with ASNT Document No. SNT-TC-1A 2011)	01 - 05 Dec 25
4.	Lean Six Sigma Green Belt	01 - 05 Dec 25
5.	Hazardous Waste Management & Prevention	02 - 03 Dec 25
6.	Mitigation of Occupational Safety & Health Challenges in Mining	02 - 05 Dec 25
7.	Latest techniques in Control & Instrumentation in Power Plants and Process Industries Applications	02 - 05 Dec 25
8.	Planning, Design, Construction and O&M of Lift Irrigation Schemes	02 - 05 Dec 25
9.	Techno Managerial Skills for Engineers	08 - 11 Dec 25
10.	Conflict Management, Decision Making and Problem-Solving Skills	08 - 11 Dec 25
11.	Rehabilitation of Buildings using latest Techniques	08 - 12 Dec 25
12.	Best Practices Operation Maintenance of EHV Substation (GIS & AIS)	09 - 11 Dec 25
13.	Plastic waste management	10 - 11 Dec 25
14.	Technology for Efficient Mine Surveying	10 - 12 Dec 25
15.	Micro Irrigation Systems Implementation, Fertilizer Management including System Maintenance	10 - 12 Dec 25
16.	Microsoft Power Platform Fundamentals (PL 900 Certification)	15 - 18 Dec 25
17.	Total Productive Maintenance (TPM)	15 - 18 Dec 25
18.	Engineering Simulation Using ANSYS & CFD	15 - 19 Dec 25
19.	Innovative Practices and Financial healthiness of the DISCOMS- Issues & Challenges	16 - 18 Dec 25
20.	Management of Training for Training & HR Managers.	17 - 19 Dec 25
21.	Big Data Analysis & Financial Management	17 - 19 Dec 25
22.	Techno-Management Program for Managers and Engineers in Mining	17 - 19 Dec 25
23.	Use of Total station & DGPS for Engineering Project	17 - 19 Dec 25
24.	Coastal Zone Climate Change Management with Remote Sensing Applications	17 - 19 Dec 25
25.	Online Monitoring Industrial Emission Effluent (Technical Guidelines and Demonstration).	22 - 24 Dec 25
26.	Quality and Reliability Management	22 - 24 Dec 25
27.	Personality Development (An Ordinary to Extraordinary Personality Empowerment)	29 - 31 Dec 25
28.	Uncertainty Measurement	29 - 31 Dec 25

For detail information please click on <https://escihyd.org/>