



First Information Brochure

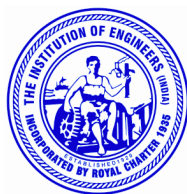
# *The Institution of Engineers (India)*

*A Century of Service to the Nation*

**All India Workshop**  
on  
**Smart Solutions for Environmental Applications**

**Date: 31<sup>st</sup> October – 01<sup>st</sup> November, 2025**  
**Place: IIT (ISM) Dhanbad, Jharkhand**

*Organised by*



*The Institution of Engineers (India)*

Dhanbad Local Centre

*Under the Aegis of*

**Environmental Engineering Division Board, IEI**

*In Association with*



EIACP Programme Centre  
Department of Environmental Science and Engineering  
IIT (ISM) Dhanbad

**Venue**

**IIT (ISM) DHANBAD**



## About The Institution of Engineers (India)

The Institution of Engineers (India) or IEI is the largest multidisciplinary professional body that encompasses 15 engineering disciplines and gives engineers a global platform for sharing professional interest. IEI has membership strength of above 2.6 lakhs. Established in 1920, with its headquarter Kolkata, IEI has served the engineering fraternity close to a century. During this period of time, IEI has been inextricably linked with the history of modern-day engineering.

In 1935, IEI was incorporated by Royal Charter and remains the only professional body in India which has been accorded this honour. Today, its quest for professional excellence has given it a place of pride in almost every prestigious and relevant organization across the globe. It provides a vast array of technical, professional and supporting services to the Government, Industries, Academia and the Engineering fraternity, operating through its 124 Centres located across the country and 6 overseas chapters. Besides, IEI has bilateral agreements with about 31 international bodies and membership of another 8 international bodies of the developed nations across the globe.

Being recognized as a Scientific and Research Organisation (SIRO) by the Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India, IEI promotes the cause of research and development by providing Grant-in-Aid support to undergraduate, post graduate students and PhD Research Scholars of Engineering Institutions and Universities.

IEI has been recognized as Scientific and Industrial Research Organization (SIRO) by the Ministry of Science & Technology, Government of India and besides conducting its' own research, provides Grant-in-Aid to UG/PG/PhD students of Engineering institutes and Universities.

IEI holds the International Professional Engineers (IntPE) Register for India under the global International Professional Engineers Alliance (IntPEA). The institution also awards the Professional Engineers (PE) Certification.

IEI in collaboration with Springer regularly publishes peer-reviewed international journal in five series, namely, Series A, Series B, Series C, Series D and Series E covering fifteen engineering disciplines.

## About Dhanbad Local Centre:

Dhanbad Local Centre of IEI is ideally located in heart of Coal City of India, Dhanbad having association and support of top most Engineering and Research Organizations of the Country like IIT (ISM, Dhanbad, DGMS, CSIR-CIMFR, BCCL, Tata Steel, SAIL, BIT, Sindri, ACC, Sindri, PDIL, Sindri, DVC etc are located within a radius of 50 km from Office of Dhanbad Local Centre of IEI, Dhanbad Local Centre of IEI came in existence in 1962 with support of over 700 Engineers of various Engineering Discipline to serve the society by imparting engineering education to the level of AMIE equivalent to B. Tech degree. Presently Corporate Membership Strength is about 1134. Various technical activities organized by this Centre like National Convention of Mining Engineer, Chemical Engineers, & Environmental Engineers, National Seminar and Workshop besides the local technical activities like World Engineering Day for Sustainable Engineering Day, World Water Day, World Telecommunication & Information Society Day, World Environment Day, Royal Charter Day, Engineers Day, World Habitat Day, Energy Conservation Day etc. Engineers of almost all the Engineering Disciplines with rich knowledge and vast experience and expertise in diversified field of engineering are available to share their knowledge from the common platform of the Institution of Engineers for Socio Economic Development of this region.

## About IIT (ISM) Dhanbad:

Indian Institute of Technology (Indian School of Mines), Dhanbad formerly Indian School of Mines (ISM), was setup by the Government of India and formally inaugurated by the Viceroy Lord Irvin on 9th December 1926 on the model of Royal School of Mines, London. Spanning 393 acres, it offers world class facilities across 17 departments, providing courses in Engineering, Sciences, Management and Humanities. IIT(ISM) Dhanbad has played a vital role in the growth and development of India's mining, mineral and petroleum sectors. ISM was granted autonomy and became a deemed university in the year



1956. In 1996, the institute came under financial and administrative control of MHRD. In the year 1997, ISM was affiliated to IIT-JEE for admission to its undergraduate courses. Indian School of Mines was converted to Indian Institute of Technology (Indian School of Mines), Dhanbad in the year 2016. Notably, at present in the QS World University Rankings 2025 by Subject: Engineering Mineral and Mining, IIT (ISM) Dhanbad ranks 20th globally and 1st in India. Additionally, it also holds a position in global rankings, including 73rd in Southern Asia by QS World Ranking 2024 and 15th in India in the NIRF 2024 Engineering category, underscoring its growing global and national presence.

### **About Department of Environmental Science and Engineering:**

The Department of Environmental Science and Engineering (ESE) was created out of the existing Centre of Mining Environment (established in 1987) at the Institute in June 2007 with the commencement of India's first B.Tech. program in Environmental Engineering under IIT-JEE— a trailblazer among national institutions. The Department also offers a regular M. Tech program and PhD program. In the course of time the Department has evolved into a premier academic and research hub, currently housing 25 state-of-the-art laboratory facilities, with ISO 9001 & OHSAS 18001 certification, and CPCB accreditation, equipped with advanced research instruments such as AAS, HPLC, GC, Microwave digester, GC-MS, Spectrophotometer, Universal Trinocular Research, Microscope, PCR etc., and supported by 18 experienced faculty members, 50+ research scholars and technical staffs. With a focus on industry-oriented research, the department has successfully completed over 100 R&D and 400 consultancy projects in areas such as pollution control, acid mine drainage, mine fire, land reclamation, and environmental management, including several mega projects supported by the World Bank, Coal India Ltd. (CIL), and international ministries. Graduates of the department are highly sought after and have been well placed in leading industries (CIL, NTPC, L&T, BALCO, Asian Paints, TATA), government and regulatory bodies (MoEF&CC, CPCB, SPCBs), consultancy firms, NGOs, and academic and research institutions (CSIR labs, IITs, NITs), reflecting an impressive placement track record. Additionally, the department has conducted over 250 thematic training programs, benefitting more than 35,000 professionals across government, industry, and academia. The Department also hosts several key centres, including the EIACP Programme Centre (MoEF&CC), the Key Resource Centre for Drinking Water & Sanitation (GoI), and the Mining Employability and Livelihood Hub (AIF), significantly contributing to environmental sustainability, capacity building, and broader societal impact.

### **About EIACP Programme Centre:**

The Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP) Centre, formerly known as the Environmental Information System (ENVIS) Centre, was established at Department of Environmental Science & Engineering, IIT(ISM) Dhanbad in the year 1991 by the Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India. The subject area of the Centre is "Environmental Problems of Mining". The Centre primarily focuses on organizing awareness programmes under Mission LiFE and other initiatives of MoEF&CC. The Centre also performs Collection, Collation, Storage, Retrieval and Dissemination of environmental information (mostly secondary data) related to its subject area and on providing that information to decision makers, policy planners, scientists, engineers, research workers, students etc. all over the country through its website ([www.ismenvis.nic.in](http://www.ismenvis.nic.in)). The centre publishes quarterly newsletters, monthly e-newsletters, and monographs, and it organizes events and competitions on important global environmental days to raise awareness. Additionally, the centre conducts Green Skill Development Programmes (GSDP) and also conducts MoEF&CC Sponsored Internship Programmes. The centre has consistently been graded 'A' since 2013-14 and continues to receive annual funding from MoEF&CC. The centre was renamed from ENVIS Centre to EIACP Centre on 11th October 2022 following a Memorandum of Cooperation (MoC) signed between the President of India acting through the Secretary in the Ministry of Environment, Forest & Climate Change, Government of India, acting further through the Economic Division of the Ministry (MoEF&CC) and the EIACP Programme Centre at IIT (ISM) Dhanbad.



## About the 2-Day Workshop:

The National Workshop on “Smart Solutions for Environmental Applications”, organized by The Institutions of Engineers (India), Dhanbad Local Centre in association with EIACP Programme Centre (RP), Department of Environmental Science and Engineering, Indian Institute of Technology (ISM) Dhanbad, is a pivotal event aligned with the Ideas4LiFE initiative. This workshop aims to explore and promote innovative smart technologies for environmental monitoring, air pollution control, sustainable water management, organic waste recycling, and climate change mitigation. Bringing together researchers, industry experts, policymakers, and students, the workshop fosters interdisciplinary collaboration and practical applications of smart solutions to address pressing environmental challenges, thus contributing to a citizen-centric, environment-friendly lifestyle and combating climate change.

The Ideas4LiFE initiative was launched by Shri Bhupender Yadav, Hon’ble Minister for Environment, Forest & Climate Change on 29th July 2024 at Dogra Convention Hall, IIT Delhi. This initiative aims to collect innovative ideas that encourage environmentally friendly behaviours, and to generate practical and impactful solutions that support Mission LiFE’s vision of fostering a citizen-centric, environment-friendly lifestyle while combating climate change.

The National Workshop will be held in Dhanbad, Jharkhand, India, on October 31<sup>st</sup> and November 1<sup>st</sup>, 2025 (Friday & Saturday), and is open to all interested participants.

The workshop aims to:

- Facilitate discussions and knowledge sharing on innovative smart technologies for environmental applications.
- Explore sustainable solutions for pressing environmental challenges.
- Promote interdisciplinary research and collaboration among participants.
- Inspire practical applications and implementations of smart solutions in various environmental sectors.

## Sub Themes:

These themes will help in structuring the discussions, presentations, and collaborations during the workshop, ensuring a comprehensive exploration of each key theme.

1. Smart Technologies for Environmental Monitoring: Innovations in pollution monitoring, real-time data acquisition, and IoT applications.
  - a. IoT-Based Pollution Sensors: Development and deployment of IoT-enabled sensors for air, water, and soil quality monitoring.
  - b. Real-Time Data Acquisition and Analysis: Techniques for real-time data collection, transmission, and cloud-based analysis.
  - c. AI and Machine Learning in Environmental Monitoring: Use of AI and machine learning for predictive analysis and decision-making in environmental monitoring.
  - d. Remote Sensing and GIS Applications: Integration of remote sensing and GIS technologies for largescale environmental monitoring.
2. Smart Technologies for Air Pollution Control: Innovations in air quality monitoring, real-time data analysis, and advanced filtration and mitigation technologies.
  - a. Real-Time Air Quality Monitoring Systems: Development and deployment of advanced air quality monitoring systems.
  - b. Filtration and Mitigation Technologies: Innovations in air filtration systems and pollutant mitigation techniques.
  - c. Predictive Modelling for Air Quality Management: Use of AI and machine learning for predicting air quality and developing mitigation strategies.
  - d. Community-Based Air Pollution Initiatives: Engagement of local communities in monitoring and mitigating air pollution.



3. Sustainable Water Management Solutions: Modular Underground Rainwater Harvesting Systems and advanced water purification techniques.
  - a. Modular Underground Rainwater Harvesting Systems: Design, implementation, and optimization of underground rainwater harvesting structures.
  - b. Advanced Water Purification Techniques: Innovations in filtration, desalination, and purification technologies for sustainable water management.
  - c. Smart Irrigation Systems: Use of sensor-based and automated irrigation systems for efficient water use in agriculture.
  - d. Water Quality Monitoring and Management: Techniques for real-time monitoring and management of water quality in natural and man-made water bodies.
4. Organic Waste Management and Recycling: Smart Solution for Solid Waste Management and nutrient recycling for sustainable agriculture.
  - a. Rapid Organic Waste Stabilizer (ROWS): Technologies for quick stabilization and composting of organic waste.
  - b. Nutrient Recycling for Sustainable Agriculture: Methods for extracting and reusing nutrients from organic waste in agriculture.
  - c. Decentralized Waste Processing Units: Development of small-scale, community-based organic waste processing facilities.
  - d. Circular Economy in Waste Management: Strategies to promote a circular economy through waste reduction, reuse, and recycling.
5. Integrated Systems for Climate Change Mitigation: Smart Solutions for River Health Monitoring and Environmental Decision Support System.
  - a. Integrated River Health Investigation Systems (IRHIS): Development of integrated systems for monitoring and improving river health.
  - b. Decision Support Systems for Environmental Management: Use of decision support systems to inform policy and management practices for climate change mitigation.
  - c. Renewable Energy Integration: Strategies for integrating renewable energy sources into existing infrastructure for climate resilience.
  - d. Climate Adaptation and Resilience Planning: Development of plans and frameworks for enhancing community resilience to climate change impacts.
6. Policy and Community Engagement: The role of policy in promoting sustainable technologies, community-based environmental initiatives, and public awareness.
  - a. Environmental Policy Frameworks: Analysis and development of policy frameworks that promote sustainable technologies.
  - b. Community-Based Environmental Initiatives: Case studies and best practices in community-led environmental protection efforts.
  - c. Public Awareness and Education: Strategies for raising public awareness about environmental issues and sustainable practices.
  - d. Corporate Social Responsibility (CSR) in Environmental Protection: Role of CSR initiatives in promoting environmental sustainability and smart solutions.

## Call for Papers

All interested participants are requested to contribute technical/ research papers and case studies detailing concept, innovation, idea or practical experiences for oral presentation. Each paper should begin with a synopsis of about 200 words and preferably within 3000 words excluding figures, tables and references. Paper can be sent to [\[Email ID: envvis@iitism.ac.in\]](mailto:envvis@iitism.ac.in).



## Closing Dates for Papers

Submission of Abstract	: August 15, 2025.
Communication of Acceptance of Abstract	: August 31, 2025.
Submission of Full-Length Paper	: September 21, 2025.

## For Guidelines for Submission of Papers scan the QR Code



<https://www.ieindia.org/webui/IEI-Activities.aspx#Call Papers>

## Registration Fee

Corporate Member of IEI	:	Rs. 15,000
Industry Person/Non-Member	:	Rs. 10,000
Academic & Research Organization	:	Rs. 8,000
Member of Supporting Org (if any)	:	Rs. 6,000
Research Scholar/Students	:	Rs. 2000

Registration fee includes Tea & Lunch during Seminar and a copy of the Souvenir/Technical Proceeding.

## Advertisement Tariff

Back Cover (Colour)	:	Rs. 1,00,000
Front Inside (Colour)	:	Rs. 1,00,000
Back Inside (Colour)	:	Rs. 75,000
Inside Full Page (Colour)	:	Rs. 50,000
Inside Half Page (Colour)	:	Rs. 30,000



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Silver Sponsorship (2 delegates are complementary)	:	Rs. 50,000

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**A/c Name:** THE INSTITUTION OF ENGINEERS (INDIA) DHANBAD LOCAL CENTRE.

**IFSC code:** SBIN0001641.

By Cheque/DD drawn in the favour of **The Institution of Engineers (India), Dhanbad Local Centre** payable at Dhanbad.

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	<p><b>Prof. Biswajit Paul</b>, Hon. Secretary, Dhanbad Local Centre, IEI.</p>

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<b>Convenor:</b>	<p><b>Prof. Alok Sinha</b> Professor and Head, Dept. of ESE &amp; Coordinator, EIACP (PC-RP), IIT (ISM) Dhanbad.</p>
<b>Members:</b>	<p><b>Prof. Riya Dutta</b> Assistant Professor, Dept. of ESE, IIT (ISM) Dhanbad.</p> <p><b>Prof. Tinesh Pathania</b> Assistant Professor, Dept. of ESE, IIT (ISM) Dhanbad.</p>

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**Registration Form**

**All India Workshop**

**on**

**Smart Solution for Environmental Application**

**31<sup>st</sup> October – 1<sup>st</sup> November, 2025**

**Dhanbad Local Centre**

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Organisation/Institution: .....

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