

All India Seminar on Emerging Trends in Digital Manufacturing using 3D Printing and Flexible Manufacturing System

IEI Engineer Bhawan, Doranda, Ranchi

August 10 & 11 | 2024



Organized By

The Institution of Engineers (India)

Jharkhand State Centre

Under Aegis of Mechanical Engineering Division Board, IEI

Knowledge Partner

Jharkhand Government Tool Room, Ranchi



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 0.8 million. Established in 1920, with its headquarter at 8 Gokhale Road, Kolkata-700020, 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 125 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 Industrial 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 Jharkhand State Centre

The Ranchi Sub-Centre of The Institution of Engineers (India) founded on 23rd July 1961 and over the years, the sub-centre was upgraded to Local Centre on 5th August 1983 and elevated to State Centre on 30th March 2001 after the creation of Jharkhand State. This centre was always striven to increase its various activities so as to cater fully the needs of the engineering fraternity at Ranchi. This centre has been actively engaged in articulating various technical matters, and on the engineer's role in society and as managers. In addition to various technical activities, this centre has been actively associated in organizing cultural programmes by the wives of the members (EWA) to inculcate bond among members and their families. All Statutory Days such as Engineers day, World Water Day, World Telecommunication and Information Society Day, World Environment Day, etc. are celebrated every year with family members.

From a little hut to a campus with a three storied building, two conference halls, each capable of seating 100 people, office, library, guest an auditorium for 300 people, 3 classroom for continuous education has been an impressive journey. This has been possible only due to the



dedicated contributions of esteemed members, State Government, Public Sector Undertakings and Private Sector Organisations.

Jharkhand State Centre has been designated as 'A' category centre by The Institution of Engineers (India) with around 6000 corporate members and 7500 student members. This centre has been adjudged as 'Best Centre' for All Round Performance in the years 2007-08,2008-09, 2010-11, 2015-16,2016-17 and 2017-18 by The Institution of Engineers (India). Jharkhand State Centre has received All India Beat Technician Chapter Award for last four years in a row i.e. 2016-17,2017-18,2018-19 and 2019-20.

For more details please visit: www.ieijscjharkhand.org

About Jharkhand Government Tool Room

The Jharkhand Government MSME Tool Room (JGMSMETR), Ranchi is a strategic endeavor towards fulfillment of the goals set by the Government of Jharkhand in its industrial policy. The Tool room have been setup by the Government of Jharkhand with Central Assistance from Ministry of MSME, Government of India and is registered under Society Registration Act, 1860. The centre has separate training and production wings equipped with comprehensive range of machine tools having the latest controls, procured from the global market, including CAD/CAM and sophisticated CNC machines, ultra-modern class rooms with latest teaching aids, hostel facilities separately for boys and girls, recreational facilities, playgrounds etc.

Themes and Sub-themes

Theme: Emerging Trends in Digital Manufacturing using 3D Printing and Flexible Manufacturing System

Smart factories and flexible manufacturing strategies for digital manufacturing are required to be competitive in today's busy and rapidly changing consumer-driven market. To support the need of be flexible and additive manufacturing, companies of all sizes are realizing that digital manufacturing resolutions can be used to define, simulate, validate, and improve manufacturing processes to reduce the cost and time often associated with physical trial and error.

3D printing, unlike other manufacturing processes, being an additive process has emerged as a viable technology for the production of engineering components. The performance of a flexible manufacturing system (FMS) has a great impact on a manufacturing firm success and the analysis of FMS justifies the high investment cost behind it. As the competition in the global market is growing, manufacturing companies compete not only on product cost and quality but also in time to market. Our next generation of industry, Industry 4.0 holds the possibilities of increased flexibility in manufacturing, along with mass customization, better quality, and improved productivity. It thus enables companies to cope with the challenges of producing gradually customized products with a short lead-time to market and higher quality.

- 1. Smart Factories and Digital Twins:** The integration of digital twins with smart factories allows real-time monitoring, predictive maintenance, and optimization of manufacturing processes.
- 2. Sustainability in Manufacturing:** As environmental concerns grow, manufacturers are adopting sustainable practices. This includes using eco-friendly materials, reducing waste, and optimizing energy consumption.
- 3. AI-Driven Continuous manufacturing:** Artificial intelligence algorithms identify patterns and suggest process improvements. Machine learning models can predict equipment failures and prevent downtime.

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 as well as poster presentation. Each paper should begin with a synopsis of about 200 words and preferably within 3000 words excluding figures, tables and references. A brief bio-data (not more than half a page, affixing a photo) of the author(s) should accompany the paper.



Last Date of Abstract submission: 15th July 2024

Abstract Acceptance: 16th July 2024

Receipt of Full Length Paper: 22nd July 2024

Acceptance of Full Length Paper: 25th July 2024

Registration Start: 10th July 2024

Proceedings

The Invited Lectures and Technical Papers will be published in Proceedings, which will be made available to the registered delegates. Papers will be included in the Proceedings, only when it is presented and the Registration Fee is paid in time.

Registration

The registration fee for the Seminar will cover participation in Technical Sessions, Seminar Proceedings, Printed materials, Seminar kit, Lunch, Tea/coffee, Seminar Banquet, etc.

Category of Delegate	Delegates
Delegates from Industries	Rs. 5000 + 18% GST
Delegates from Academia/Institutes	Rs. 2000 + 18% GST
Research Scholars and Students	Rs. 500 + 18% GST
Corporate Members of IEI	Rs. 500 + 18% GST



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Account Details

"The Institution of Engineers (I), JSC", payable at Ranchi

Account Number : 480102050000259

Bank's Name : Union Bank of India

Branch : Shyamali Colony, Doranda, Ranchi

IFSC Code : UBIN0548014

by A/C Payee Cheque/Demand Draft/Net Banking

About Ranchi

Ranchi is the capital of state of Jharkhand, which is endowed with rich iron ore and coal deposits. With its rich mineral resources and industrial base, Ranchi is rapidly developing into an important industrial sector in India. The city is surrounded by thick forests and beautiful natural waterfalls and still unspoilt by modern commercialism. Ranchi is located in eastern part of India, around 400 km from Kolkata. It has very pleasant and cold climate throughout the year and the temperature in November may vary between +21°C and +26°C

Travel

Domestic airlines operate between Ranchi and other major cities of India such as New Delhi, Mumbai, Kolkata, Bengaluru, Hyderabad, Raipur, Bhubneshwar and Patna. Ranchi is also well connected by rail and road with all major cities of the country, namely Bengaluru, Bhubaneshwar, Chennai, Hyderabad, Jamshedpur, Jaipur, Kolkata, Mumbai, Nagpur, Patna, Raipur, New Delhi, Vishakhapatnam, etc.

Accommodation

Ranchi offers a wide range of accommodation to suit every budget. Both economy and luxury class hotels are located within 5 km from the directly or through Seminar Venue. Delegates are requested to book the accommodation in advance to get preferred choice.

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Address for Correspondence

Er. Harun Ansari
Honorary Secretary, IEI, JSC
IEI Engineers Bhawan,
Nepal Kothi Campus, Doranda,
Ranchi 834002, India
Phone: 0651-3510412
E-mail: jharkhandsc@ieindia.org

Er. M K Uphadhyay
Convener
IEI Engineers Bhawan,
Nepal Kothi Campus, Doranda,
Ranchi 834002, India
Phone: 7766939090
E-mail: ieijscseminar@gmail.com



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IEI Engineer Bhawan, Doranda, Ranchi

To
The Hony. Secretary
The Institution of Engineers (India)
Jharkhand State Centre, IEI Engineer Bhawan
Nepal Kothi Campus, Doranda
Ranchi - 834 002, India

Dear Sir,

The following persons may please be registered as delegates for participation in the above seminar to be held at Ranchi

Sl No.	Name & Designation	Accompanying Spouse (Yes/No)	Category Registration (Organizational / Individual/ Educational Institute/Member IE(I)/ Student Member)	Payment Cheque/ Draft No. & Date	Enclosing Amount
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3.					
4.					
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