EVENT REPORT

20th Symposium on National Frontiers of Engineering (NaTFoE–2026) & Innovation in Manufacturing Practices (IMP–2026) 8–10 August 2026 | IIT (ISM) Dhanbad

Overview

The 20th Symposium on National Frontiers of Engineering (NaTFoE–2026), held with IMP–2026 at IIT (ISM) Dhanbad from 8th to 10th August 2026, brought together INAE Fellows, academic leaders, national R&D laboratories, industry, start-ups, venture mentors and young engineers. The programme addressed two national-priority themes: advanced manufacturing, critical metals and process technologies; and manufacturing and integration of antennas, RF structures and radar-cross-section (RCS) control technologies for stealth defence platforms.

Across the three days, the dominant conclusion was that strategic self-reliance depends on integrated design-to-manufacturing-to-test ecosystems—not isolated innovations. Digital engineering, qualification and metrology, resilient supply chains, sustainability and sustained academia–industry–government collaboration emerged as common requirements.

Day 1 — Saturday, 8 August 2026 | Penman Auditorium, IIT(ISM) Dhanbad

Inaugural function | Penman Auditorium | 9:30–10:30 AM

The programme commenced at Penman Auditorium with Hon'ble Shri Sanjay Seth, Minister of State for Defence, Government of India, as Chief Guest. The dignitaries included Shri Ashok Kumar Panda, CMD, SAIL; Mr. J. D. Patil, President, INAE; Prof. Sanghamitra Bandyopadhyay, FNAE, ISI Kolkata; Prof. Sukumar Mishra, FNAE, Director, IIT (ISM) Dhanbad; and Prof. Amit Rai Dixit, Convener. The inaugural function established the event's focus on strategic technology, indigenous engineering capability and collaboration among academia, industry and government.



Inaugural Address by Hon'ble Shri Sanjay Seth, Minister of State for Defence, GoI



Relase of Symposium Proceeding

Plenary Address Session 1 | 10:45–11:45 AM

Mr. J. D. Patil, President, INAE and Shri Ashok Kumar Panda, CMD, SAIL delivered the plenary addresses, chaired by Prof. J. Ramkumar, IIT Kanpur and Dr. Anupam Agnihotri, Former Director JNARDDC Nagpur.

The session underlined that national engineering capability must connect frontier research with industrial scale-up, quality systems and deployable outcomes.



Plenary Address by Shri J. D. Patil, President, INAE



Plenary Address by Shri Ashok Kumar Panda, CMD, SAIL

New programme event: Panel Discussion | 11:50 AM–12:30 PM

A panel discussion was introduced as an important new feature of the symposium on "Strategic Technologies for Viksit Bharat 2047: Building Synergies among Academia, Industry, and Government." Senior Fellows of INAE and distinguished leaders including Prof. Sukumar Mishra, Director IIT(ISM) Dhanbad, Prof. Sanghamitra Bandyopadhyay Former Director ISI Kolkata, Ujjwal Maulik Jadavpur University, Prof. V. M. S. R. Murthy Director IIEST Shibpur, Prof. J. Ramkumar IIT Kanpur, and Shri Ashok Kumar Panda CMD SAIL deliberated on India's strategic technology requirements. Mr. J. D. Patil President INAE was the panel lead and moderated the session.









Panel conclusion: India needs mission-oriented partnerships that link academic knowledge, industrial execution, public R&D infrastructure and policy support. Shared facilities, demonstrator projects, common qualification protocols and follow-up mechanisms were identified as practical ways to convert dialogue into national capability.

Session 1 — Theme 1: Advanced Manufacturing, Critical Metals & Process Technologies | 12:30–1:40 PM

The session covered advanced manufacturing, worker protection, aerospace systems engineering, nanostructured steels and advanced coatings through contributions led by Prof. J. Ramkumar IIT Kanpur, Prof. Aparna Singh IIT Mumbai, Ms. Anushri Nag TATA Steel (R&D) Jamshedpur and Dr. Sanghamitra Chatterjee ICT Mumbai.

Keynote Talk- Prof. Janakarajan Ramkumar, IIT Kanpur

Topic: Technological Interventions for Protecting Workers from Air Pollutants in Indian Manufacturing and Work Operations

The talk presented engineering solutions for controlling hazardous airborne emissions directly at manufacturing sources, supplemented by portable clean-air systems and advanced nanofibre filtration. It demonstrated how technology-led interventions can simultaneously improve occupational safety, productivity and environmental sustainability.

Invited Talk -Prof. Aparna Singh, IIT Bombay

Topic: Development of Nano-Structured Steels for Structural Applications

She discussed the development of nanostructured bainitic and pearlitic steels that combine very high strength with improved toughness through controlled microstructural refinement. The work demonstrated that nanoscale microstructure can be achieved using scalable conventional processing routes, offering strong potential for demanding structural applications.

Invited Talk -Ms. Anushri Nag, Tata Steel (R&D), Jamshedpur

Topic: Advanced Metallized Al_2O_3/Graphite Coating for Sink Roll Assemblies in Continuous Galvanizing Lines

She presented an advanced ceramic coating system developed to improve the corrosion and wear resistance of sink rolls exposed to aggressive molten-zinc environments. The work combines materials modelling, laboratory and pilot-scale testing, and industrial validation to enhance component durability and sustainability in continuous galvanizing operations.

Invited Talk -Dr. Sanghamitra Chatterjee, Institute of Chemical Technology (ICT), Mumbai

Topic: *Nanomaterial-Engineered Sensors for Theranostics: Advancing Ultrasensitive Detection Technologies*

She highlighted the integration of nanomaterials such as carbon nanotubes, fullerenes and graphene with electrochemical sensing for highly sensitive biomedical detection. The developed approaches show potential

for rapid diagnostics, therapeutic integration and personalized medicine, with applications extending to bio-imaging, drug analysis and environmental monitoring.



The technical conclusion was that scalable manufacturing must combine process-specific safety, microstructure control, advanced joining and machining, modelling, digital twins, in-process monitoring and industrial validation. Aerospace benefits arise when manufacturability and lifecycle requirements enter the design loop from the outset.

Session 2 — Theme 2 | 2:30–3:50 PM

Dr. V. S. Gangwar LRDE Bangalore, Dr. Raghvendra Kumar Chaudhary IIT Kanpur, Mr. Mahesh Chand Kala CEO, JV Micronics, Ms. Mamta Kumari LRDE Bangalore and Dr Neeraj Kumar Accordyne Pvt. Ltd. addressed next-generation arrays, stealth antennas, RF structures and low-observable platform integration.

Keynote Talk-Dr. V. S. Gangwar, LRDE, DRDO, Bengaluru

Topic: Technology Challenges in Next-Generation Panel-Based Active Array Antennas

He discussed the evolution of active phased-array radar antennas toward SWaP-C optimized panel-based architectures for airborne and naval platforms. The modular and scalable approach offers lower profile and weight, simplified assembly and maintenance, improved manufacturability, and reduced lifecycle cost for radar, SATCOM, EW and next-generation communication systems.

Invited Talk -Dr. Raghvendra Kumar Chaudhary, IIT Kanpur

Topic: Stealth Antennas and Meta-structures: Manufacturing & RCS Control

He presented recent developments in conformal antennas, frequency-selective surfaces, metasurfaces, electromagnetic absorbers and radomes for reducing radar cross-section while maintaining communication and radar functionality. The talk emphasized the integration of electromagnetic design, manufacturing, measurement and testing for practical low-observable defence systems.

Invited Talk -Mr. Mahesh Chand Kala, CEO, JV Micronics

Topic: *Indigenous RF Absorbers, Anechoic Chambers and EMI/EMC Technologies*

His presentation highlighted indigenous capability in the design and manufacturing of RF absorbers and anechoic chambers for antenna and EMI/EMC measurements. The deliberation emphasized strengthening domestic RF test infrastructure, industry–academia interaction and capacity building for advanced antenna and electromagnetic compatibility technologies.

Invited Talk -Ms. Mamta Kumari, Scientist-F, LRDE, DRDO, Bengaluru

Topic: *Engineering Realization of Stealth/Low-Observable Defence Platforms*

She explained how reduced radar detectability requires the integrated use of optimized platform geometry, advanced materials, antennas and RF structures, radar-absorbing materials, precision manufacturing and system integration. She emphasized that electromagnetic performance must be considered from the initial design stage through manufacturing, assembly, testing and maintenance of low-observable platforms.

Invited Talk -Dr. Neeraj Kumar, Founder Director, Accordyne Pvt. Ltd.

Topic: Communication Systems for SWARM UAVs

The talk presented resilient mesh-network architectures for UAV swarms, addressing intra-swarm interference, jamming and scalable multi-UAV communication. Distributed beamforming, MIMO, cognitive radio, SDRs and AI-enabled multi-agent control were highlighted as key technologies for robust and autonomous swarm operations.













The speakers' combined conclusion was that electromagnetic, structural, thermal, packaging and manufacturing requirements must be co-optimized. Stealth cannot be added at the end; it must be engineered from platform concept through fabrication, calibration, testing and maintenance.

Cultural Function and Gala Dinner | 7:00 PM onwards

The technical deliberations were complemented by a vibrant cultural programme presented by a student troupe from Banaras Hindu University (BHU), Varanasi. The programme beautifully showcased the rich cultural heritage and artistic traditions of Varanasi, with a graceful Kathak performance as one of its major highlights.

The cultural programme was followed by a Gala Dinner, which provided an informal and congenial setting for interaction among INAE Fellows, distinguished speakers, delegates, young engineers, researchers and industry participants.





Day 2 — Sunday, 9 August 2026 | Penman Auditorium, IIT(ISM) Dhanbad

IMP–2026 Inaugural Function | Penman Auditorium | 9:30–10:30 AM

The second day opened with the inaugural session of IMP–2026. Prof. S. S. Joshi, Director, IIT Indore, was the Chief Guest. Guests of Honour included Dr. Ankathi Raju, Director, DRDL Hyderabad; Prof. V. M. S. R. Murthy, FNAE, Director, IIEST Shibpur; Prof. Sukumar Mishra, Director, IIT (ISM) Dhanbad; and Prof. Alok Kumar Das, Coordinator, IMP–2026. The function positioned IMP as a platform for young engineers, innovators, start-ups and MSMEs to connect ideas with mentoring, evaluation and implementation pathways.



Inaugral Function of IMP-2026



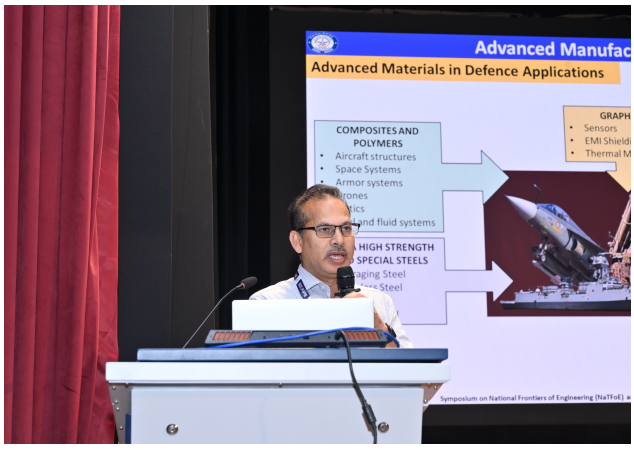
Flecitation of Chief Guest Prof. S. S. Joshi, Director, IIT Indore

Plenary Address Session 2 | 10:45–11:45 AM

Addresses by Prof. S. S. Joshi, and Dr. Ankathi Raju emphasized advanced manufacturing, indigenous defence systems and the need for credible development, test and validation capacity. Their collective conclusion was that self-reliance requires indigenous design and indigenous evaluation to mature together.



Plenary address by Prof S S Joshi, Director IIT Indore



Plenary address by Dr. Ankathi Raju, Director DRDL Hyderabad

Session 4 — Theme 2 | 11:45 AM–1:15 PM

Prof. Debatosh Guha, Dr. Pravakar Mallick, Mr. S. V. Madhu Sudhan Reddy, Dr. Preeti Kumari and Mr Chintan Mishra addressed antenna manufacturability, defence-system evaluation, RF/RCS measurement and microwave dielectric ceramics.

Keynote Talk-Prof. Debatosh Guha, University of Calcutta — Keynote Lecture

Topic: Challenges in Antenna Engineering: Science to Manufacturing

He discussed the evolving challenges in antenna engineering, particularly the transition from fundamental electromagnetic design to practical manufacturing. The lecture emphasized the need to balance antenna performance with manufacturability, production constraints and realization of reliable RF systems.

Invited Talk -Dr. Pravakar Mallick, ITR, DRDO

Topic: Test & Evaluation of DRDO Developed Systems towards Atmanirbhar Bharat

He highlighted the critical role of rigorous test and evaluation in validating indigenous defence technologies before their induction into the Armed Forces. Accurate instrumentation and reliable test data were emphasized as essential for system maturation, qualification and strengthening India's self-reliance in defence technology.

Invited Talk -Mr. S. V. Madhu Sudhan Reddy, Rohde & Schwarz India

Topic: Radio Frequency Test and Measurement Aspects of Radar Cross Section

He discussed RF test and measurement techniques for accurate characterization of Radar Cross Section (RCS), a key parameter governing radar detectability and stealth performance. The presentation highlighted advanced instrumentation such as vector network analyzers, signal generators and receivers extending to millimetre-wave frequencies.

Invited Talk -Dr. Preeti Kumari, CSIR–National Physical Laboratory, New Delhi

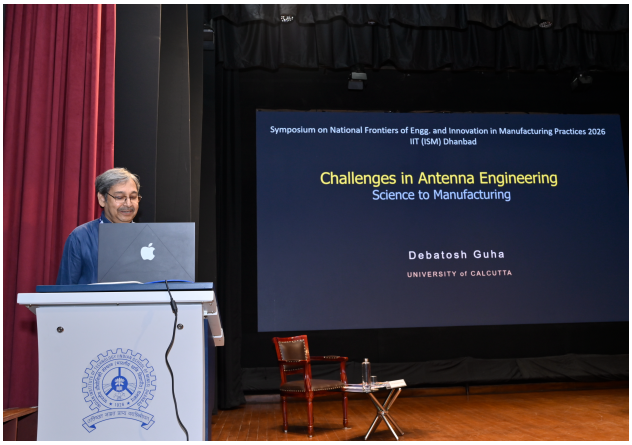
Topic: Microwave Dielectric Ceramics: From Material Development to Microwave Device Integration

She discussed the development of microwave dielectric ceramics and their integration into high-frequency RF and microwave devices. The presentation connected material composition, processing and dielectric properties with applications in resonators, filters, antennas and other advanced microwave components.

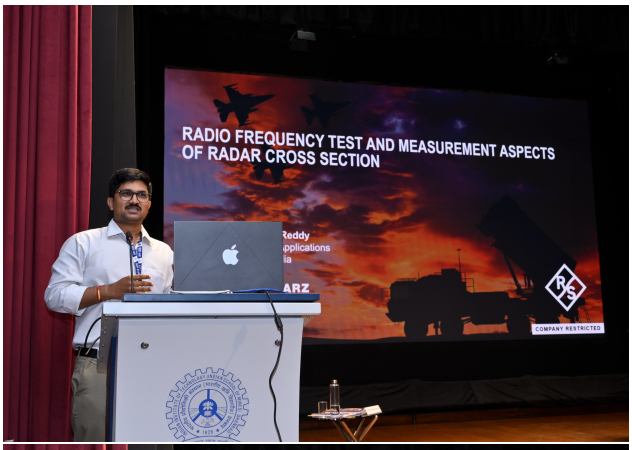
Invited Talk -Mr. Chintan Mishra, Founder & CEO, Rebhu Computing

Topic: Indigenous Manufacturing & Integration of RF Data-Link Systems for Unmanned Defence Platforms

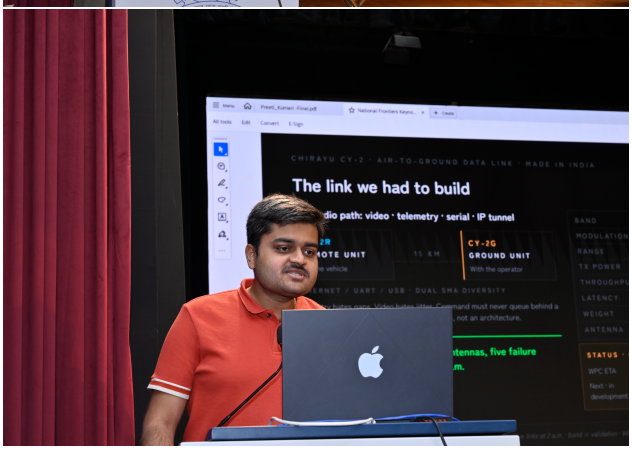
The talk addressed practical challenges in integrating indigenous RF data links into unmanned defence platforms, including antenna placement, link-budget constraints, EMI management and payload integration. It stressed indigenous processors, field-hardened electronics and disciplined system integration as essential for developing robust, stealth-ready unmanned platforms.

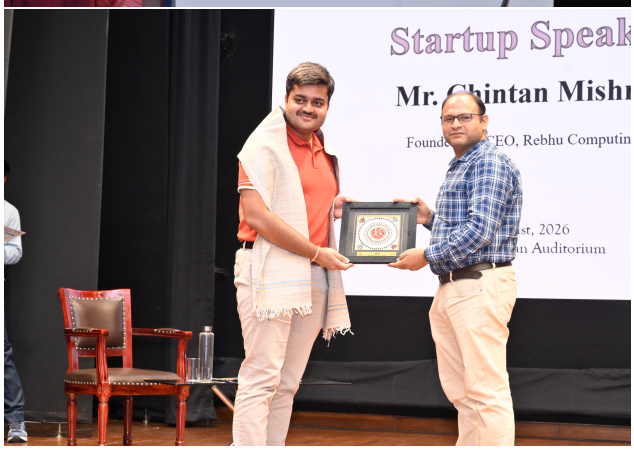












The session concluded that reproducibility, tolerances, calibration, dynamic range, controlled test geometry, material compatibility and packaging are as decisive as ideal electromagnetic design. High-performance RF hardware therefore needs a closed design–fabrication–metrology loop.

Session 5 — Theme 1 | 2:15–4:00 PM

Prof. V. M. S. R. Murthy, Dr. Ankur Gupta, Dr. Pratik Swarup Dash and Mr. Ayush Dhoot discussed mining/manufacturing practice, functional hybrid scaffolds, net-zero steel and indigenous rare-earth/permanent-magnet value chains.

Keynote Talk-Prof. V. M. S. R. Murthy, IIT (ISM) Dhanbad
Topic: Advanced Manufacturing, Critical Metals, and Process Technologies
He highlighted the significance of Theme 1 topic in strengthening India's manufacturing capabilities. He illustrated the concept of incremental innovation by sharing examples of industrial machines developed with his students, demonstrating how continuous improvements to existing technologies can lead to practical, cost-effective, and industry-relevant engineering solutions.

Invited Talk -Dr. Ankur Gupta, IIT Jodhpur
Topic: Hybrid Scaffolds for Sensing and Remediation Technologies
He presented advanced manufacturing approaches for developing functional microsystems and hybrid scaffold-based platforms for sensing and environmental remediation. The work emphasized low-cost and scalable fabrication, integrating advanced manufacturing with microsystem design for deployable healthcare, environmental-monitoring and engineering applications.

Invited Talk -Dr. Pratik Swarup Dash, Tata Steel R&D, Jamshedpur
Topic: Towards Net-Zero Steel: Technology Pathways for Industrial Decarbonisation

He discussed emerging pathways for decarbonising steel production, including hydrogen-based reduction, syngas-assisted ironmaking, electric smelting, biomass utilization and CCUS. The presentation emphasized integrating process innovation, circular resource utilization and low-carbon technologies to enable India's transition towards sustainable and competitive steelmaking.

Invited Talk -Mr. Ayush Dhoot, Ashvini Magnets Pvt. Ltd. / Ashvini Rare Earth Pvt. Ltd.

Topic: From Rare Earth Oxides to Advanced Magnet Applications: Building an Indigenous Rare Earth and Permanent Magnet Value Chain

He highlighted the strategic importance of rare-earth permanent magnets for electric mobility, renewable energy, robotics, drones, aerospace and defence. The talk emphasized developing an indigenous end-to-end value chain, from separated rare-earth oxides to metals, magnetic alloys, permanent magnets and application-ready components, thereby reducing strategic supply-chain vulnerabilities.



The technical conclusion was that critical-material security must span feedstock, separation or conversion, functional-material production, component manufacture, quality assurance and recycling. Low-carbon steel similarly requires combined process pathways, circular inputs and digital optimisation rather than a single technological route.

Parallel Technical Session: Sub-Theme Critical Minerals and Materials | I2H Building

A parallel technical session on “Critical Minerals and Materials” was organized as part of the 20th Symposium on National Frontiers of Engineering (NatFoE) & Innovation in Manufacturing Practices (IMP) 2026 on 09 August 2026 at IIT (ISM) Dhanbad. The session focused on the growing importance of critical and strategic minerals in the context of energy security, technological advancement, national security and the development of indigenous mineral and materials value chains.

The session brought together five distinguished experts who shared their perspectives on the exploration, extraction, processing, conversion and technological development associated with critical minerals and materials. The session was attended by around 120 participants, comprising faculty members, research scholars, postgraduate students and undergraduate students. The presentations and subsequent interactions provided an opportunity for participants to understand the technological challenges and emerging opportunities associated with establishing a robust domestic critical-minerals ecosystem.

Inaugural Proceedings : Prof. Avanish Kumar, Assistant Professor, FMME, IIT (ISM) Dhanbad, formally welcomed the distinguished speakers and participants. The speakers were felicitated with floral bouquets as a gesture of welcome by Prof. S. Soren, Head, FMME, IIT (ISM) Dhanbad. Prof. Avanish Kumar along with Prof. S. Soren chaired the technical session and facilitated the presentations and interactions with the speakers.

Prof. S. Soren, HoD FMME IIT(ISM) Dhanbad welcoming the distinguished speakers:






Technical Presentations : The session comprised five technical presentations covering different aspects of critical minerals, including their strategic importance, extraction and conversion, pyrometallurgical processing, mineral processing and the development of indigenous technologies. The details are given below:

Distinguished Speakers	Title of Talk
Dr. Anupam Agnihotri, Advisory Director (Technical) at MaxelS Tekventures Pvt. Ltd, Former-Director of JNARDDC, Ministry of Mines, GoI	Critical Minerals: The New Geography of Energy, Technology and National Security
Dr. S K Satpati, OS & Head, UED, MG/BARC, DAE, GoI	Challenges in Extraction and Conversion of Critical Material

Dr. Sujit Chowdhury, OS & Head, MRS, UED, BARC, DAE, GoI	Technical discussions on pyrometallurgical processes
Dr. T. S. R. C. Murthy, Head, Mineral Processing Division, BARC, DAE, GoI	Resource to Concentrate Strategies for Critical and Strategic Minerals: Process Flowsheet Development and Technology Demonstration
Dr. D K Sahoo, Scientific Officer G, BARC, DAE, GoI	Indigenous Technologies for the establishment of critical elements value chain in the country

The technical presentations were followed by interaction between the speakers and participants. The interaction was particularly relevant for young faculty members and researchers, as it provided exposure to current technological challenges and opportunities in an area of growing national importance.

Concluding Remarks : The technical session on "Critical Minerals and Materials" successfully brought together experts to discuss the strategic and technological dimensions of critical minerals. The session concluded with remarks by Dr. D. K. Singh, Visiting Professor, FMME and former Head, Hydrometallurgy & Rare Earth Development Section, Materials Group, BARC, who provided the concluding observations.

Overall Assessment : The parallel session served as an effective technical forum for discussing the strategic importance, technological challenges and indigenous development pathways associated with critical minerals and materials. The participation of approximately 120 faculty members, researchers and students, along with distinguished experts contributed to meaningful technical exchange and knowledge dissemination. The session reinforced the importance of continued research, technology development, process innovation and industry–academia–government collaboration for achieving greater self-reliance in critical minerals and materials and for supporting India's future energy, manufacturing and technological needs.

Photographs:

Dr. Anupam Agnihotri delivering his presentation on critical minerals and national security:



Felicitation of the distinguished speakers during the parallel session:




Participants and Interaction between the participants and distinguished speakers:






Group photograph of distinguished speakers, session chair and organizers of the parallel session:

Innovation in Manufacturing Practices-2026 | Parallel programme at I2H Building

The Innovation in Manufacturing Practices (IMP 2026) competition was organized as a national-level platform to encourage students, researchers, innovators, MSMEs and startups to present innovative engineering solutions, prototypes and manufacturing technologies. The competition was conducted alongside the 20th Symposium on National Frontiers of Engineering (NatFoE 2026) at IIT (ISM) Dhanbad. The official IMP 2026 framework invited participation across Undergraduate, Postgraduate, PhD, and MSME/Startup categories and emphasized working prototypes/research models, demonstration videos, and concise innovation descriptions.

A total of 51 submitted entries were received through the registration process, including entries from UG students, PG students, PhD researchers, and Startups/MSMEs. Following screening and evaluation, selected innovations were invited for mentoring and the final showcase.

The expert panel comprised distinguished professionals from government, academia, entrepreneurship, and the venture capital ecosystem. The panel included Mr. Mahip Singh, CEO, Innovation Hub UP; Dr. Balakrishna, Joint Director/Scientist, MeitY; Mr. Rohit Kale, Venture Capitalist, Westratys Venture; Prof. Arun Dayal Udai, Associate Professor, IIT (ISM) Dhanbad; Mr. Arijit Bhattacharya, Venture Capitalist, Coinnoovate Ventures; and Mr. Ranjit Mayengbam, Founder, 3CIT Solutions. Their diverse expertise provided valuable perspectives on innovation, technology development, entrepreneurship, commercialization, and venture funding.











Following the mentoring and evaluation process, 12 unique innovations were shortlisted for showcase. Session 6 featured a short presentation by the IMP awardee, followed by IMP awards and certificate distribution. The final competition culminated in the recognition of three winning innovations:



First Prize, under UG Category (Cash Prize Rs 25000/–) Ashutosh Rath: Indigenously Developed Portable 8-Channel EEG Device



First Prize, under PhD Category (Cash Prize Rs 25000/–) Piyush Kumar: Advanced Machining of Critical Mineral-Bearing Alloys through Controlled Abrasive Water Jet Disintegration



Second Prize, under UG Category (Cash Prize Rs 10000/–) Aman Kumar Gupta: Smart Aqua Track – IoT-Based Real-Time Water Monitoring and Leakage Detection



Group Photogrphs of the participants of IMP-2026

The overall process demonstrated the multidisciplinary nature of contemporary engineering innovation and highlighted solutions addressing healthcare technology, sustainable manufacturing, agriculture, renewable energy, smart infrastructure, robotics, mining and resource management.

A mentoring session led by Prof. J. Ramkumar, IIT Kanpur focused on helping young engineers translate technical ideas into start-ups.

IMP conclusion: Technical merit must be accompanied by a clear problem statement, prototype evidence, manufacturability, market or mission relevance, intellectual-property awareness, validation planning and a credible route to scale.

Day 3 — Monday, 10 August 2026 | I2H Building, IIT(ISM) Dhanbad

Research Paper Presentation by UG, PG and PhD Students

A significant new academic component introduced in NaTFoE–2026 was the encouragement of UG, PG, PhD and PDF students to submit research papers aligned with the two technical themes of the symposium. The initiative received an encouraging response, with around 150 research papers submitted from students and research scholars. Following technical review, 50 papers were selected for oral presentation, which were organized in five parallel technical sessions. The paper-presentation sessions provided young researchers an opportunity to present their work before experts from academia, R&D organizations and industry and receive technical feedback. To recognize outstanding research, two Best Paper Awards, carrying a cash prize of ₹10,000 each, were instituted—one under each symposium theme.

The Best Paper Awards were conferred on Dr. Santosh Kumar Singh, IPDF, IIT (ISM) Dhanbad, and Mr. Yajush, MNNIT Allahabad, for their outstanding research contributions under the respective themes of the symposium.

Keynote Address -Prof. Prashant Rawat, IIT Madras

Topic: Biomimicry for Advanced Manufacturing Applications
Prof. Rawat discussed how naturally evolved structural architectures can inspire advanced engineering materials combining strength, toughness, flexibility and lightweight characteristics. He emphasized translating biological functional mechanisms into manufacturable structures to achieve improved performance, resource efficiency and sustainability.

Keynote Address -Prof. Prithviraj Mukhopadhyay, IIT Delhi

Prof. Mukhopadhyay delivered a keynote associated with the research-paper sessions, providing a broader perspective on emerging engineering research and encouraging young researchers to pursue technically rigorous and application-oriented work. The session reinforced the importance of converting fundamental research into innovative engineering solutions relevant to the symposium themes.



Best Paper Awards (Theme-1): Dr. Santosh Kumar Singh, IPDF, IIT (ISM) Dhanbad



Best Paper Awards (Theme -2) Mr. Yajush, MNNIT Allahabad,



Flecitation of Prof Prashant Rawat and Prof. Prithviraj Mukhopadhyay



Paper presentation session

Outcome of the Student Research Initiative

The introduction of research-paper presentations significantly enhanced the academic and student-engagement component of NaTFoE–2026. The large number of submissions demonstrated strong interest among young researchers in advanced manufacturing, critical materials, process technologies, antenna/RF systems and strategic defence technologies. The combination of keynote lectures, parallel oral sessions and Best Paper Awards provided an effective platform for identifying promising young researchers, encouraging high-quality research and connecting student innovation with nationally relevant engineering challenges.

Valedictory Session | 2:30–3:30 PM

The three-day symposium concluded with the Valedictory Session on 10 August 2026, marking the successful completion of NaTFoE–2026 & IMP–2026. The session included the Best Paper Awards and certificate distribution and formally acknowledged the valuable contributions of invited speakers, authors, reviewers, mentors, organizing committee members, volunteers and participants.

Prof. Sukumar Mishra, Director, IIT (ISM) Dhanbad, in his address, emphasized the importance of transforming the technical deliberations and interactions generated during the symposium into sustained research collaborations, industry partnerships and technology-development initiatives. He encouraged young engineers and researchers to pursue innovative solutions addressing nationally relevant engineering challenges.

Prof. Raman Singh, Monash University, Australia, highlighted the importance of high-quality interdisciplinary research and international collaboration in addressing emerging engineering challenges. He encouraged young researchers to combine strong scientific fundamentals with application-oriented research and to develop technologies capable of creating meaningful industrial and societal impact.

Prof. Amit Rai Dixit, Convener, NaTFoE–2026 & IMP–2026, presented a summary of the three-day symposium and highlighted the successful integration of plenary and keynote lectures, expert talks, the newly introduced panel discussion, IMP innovation competition, and student research-paper presentations. He emphasized that the symposium had effectively brought together academia, industry, R&D organizations, start-ups and young researchers on a common platform and expressed the need to carry forward the collaborations and technical interactions initiated during the event.



Brief Summary and outcome of symposium & IMP-2026 by Prof Amit Rai Dixit, Convener NatFoE-2026



Address by Prof Sukumar Mishra, Director, IIT(ISM) Dhanbad



Address by Prof Raman Singh, Monash University, Australia



Dignitaries of the Valedictory session

The valedictory proceedings concluded with the presentation of Best Paper Awards and certificates. The session reaffirmed the central outcome of NaTFoE–2026: that meaningful progress in frontier and strategic engineering technologies requires continued interaction among academia, industry, government and national R&D organizations beyond the symposium itself.

End