



INSTITUTE HIGHLIGHTS

AIMTDR 2025

The 10th International and 31st All India Manufacturing Technology, Design and Research (AIMTDR 2025) Conference was hosted by IIT Indore from December 11–13, 2025, under the theme “Green Manufacturing.” Established in 1967, AIMTDR is the oldest conference in the manufacturing domain and achieved international status in 2006.

AIMTDR 2025 became the largest academic conference hosted by IIT Indore, with participation from over 550 delegates representing academia, R&D organisations, and industry from India and abroad. The conference was inaugurated by Dr. Anand Deshpande, with addresses by Prof. Suhas S. Joshi, Director, IIT Indore; Prof. Neelesh Kumar Jain, Organizing Chair; Sh. Harrish Bajaj, Chairperson, NAC; and Prof. B. B. Ahuja, Vice-Chairperson, NAC.



The conference received 438 paper submissions, of which 359 papers were presented across 44 technical sessions, highlighting advances in sustainable manufacturing. During the inauguration, Emeritus Prof. S. S. Pande (IIT Bombay), Dr. (Retd.) Dasharathram Yadav (Former Director, DRDL Hyderabad), and Sh. Jayant Damodar Patil (President, INAE) were conferred the Lifetime Achievement Award, and the conference souvenir was released. The technical programme featured 10 keynote lectures by international experts, including Prof. Ramulu Mamidala, Prof. Saurav Goel, Prof. Lingxue Kong, Prof. Daisuke Nakamura, and Prof. Vijay Vasudevan, along with memorial lectures by Dr. Shivkumar Kalyanraman, CEO, ANRF, and Prof. B. Gurumoorthy, IISc Bengaluru. With 16 industry exhibition stalls and strong industry participation, the conference reinforced IIT Indore’s growing stature in manufacturing research. The conference concluded with the Valedictory Function on December 13, 2025, with Dr. Manish Jaiswal, Director, NATRAX, as the Chief Guest. It was announced that the next AIMTDR Conference will be hosted by IIT Hyderabad in December 2027, marking the Diamond Jubilee year of AIMTDR.



Vigilance Awareness Week

IIT Indore observed Vigilance Awareness Week 2025 with a focus on reinforcing the values of integrity, accountability, and transparency across the Institute. As part of the observance, the Institute organized Essay, Poster, and Slogan competitions on the theme “Vigilance: Our Shared Responsibility,” encouraging active participation and reflection on ethical public conduct. The competitions witnessed thoughtful engagement, with handmade posters and handwritten slogans effectively conveying the message of collective responsibility and ethical citizenship. The week-long observance culminated in a Closing Ceremony on November 3, 2025, which was graced by Mr. Rajiv Verma, Former Director, Central Vigilance Commission, as the Chief Guest. In his address, Mr. Verma emphasized the significance of preventive vigilance practices and robust complaint-handling mechanisms in strengthening institutional transparency and accountability.



Eight-Day International Workshop on Advanced Cancer Therapies

The research team led by Prof. Chelvam Venkatesh, Department of Chemistry, IIT Indore, organized an eight-day international workshop titled “Technological Advancements in the Treatment of Brain, Head and Neck Cancers using Small Molecule Ligands” from December 4–15, 2025, in collaboration with the Institute of Science, Tokyo; Osaka Medical and Pharmaceutical University; and Kyoto University. The workshop focused on recent developments in Boron Neutron Capture Therapy (BNCT), including its evolution, boron-based agents for targeted cancer treatment, and emerging accelerator-based, hospital-friendly BNCT technologies, along with discussions on clinical case studies. Lectures by Prof. Hiroyuki Nakamura, Prof. Shinji Kawabata, and Prof. Hiroki Tanaka provided valuable international perspectives. The programme enhanced awareness of advanced cancer therapies and fostered academic collaboration. The workshop was funded by SPARC, MHRD, Government of India.



Janjatiya Gaurav Divas

The Community Cell, IIT Indore, organized Janjatiya Gaurav Divas on November 18, 2025, inviting the institute community to commemorate and reflect upon the rich heritage, contributions, and legacy of India’s tribal communities. The programme featured an address by Shri Harsh Chouhan, Founder of Shivganga Samagra Gramvikas Parishad (SSGP), who highlighted the vital role of tribal communities in the nation’s social and cultural fabric, emphasizing that they are valuable assets to the country.



Constitution Day

IIT Indore observed Constitution Day on November 26, 2025, commemorating the adoption of the Constitution of India through a series of talks and activities, including a quiz on Constitutional Democracy and the reading of the Preamble. The observance was marked by enthusiastic participation, reflecting the Institute community’s collective commitment to constitutional values, democratic principles, and the enduring spirit of unity and responsible citizenship.

Prerna Samvaad

CISKS, IIT Indore, in collaboration with Ekatma Dham, organized “Prerna Samvaad” on November 12, 2025, celebrating the relevance of Advaita Vedanta in the contemporary world. The programme featured an address by Swami Shuddhidananda, President of Advaita Ashram, Mayavati, on the practical application of Advaita in modern life, followed by a guest address by Padma Shri Acharya Jonas Masetti, who highlighted Vedanta’s global philosophical influence. The event also included cultural performances, with a Carnatic vocal recital by Rahul Vellal and a Samba performance by Brazilian musicians, adding a rich intercultural dimension.



Teachers Training Program

Educational Outreach section, IIT Indore conducted a residential training programme from November 21 to December 1, 2025, for 157 teachers of PM SHRI Jawahar Navodaya Vidyalayas, MP, in two batches during November–December 2025, at the request of the Navodaya Leadership Institute (NLI). The programme focused on pedagogical practices, ICT integration, learner diversity, and holistic development. A total of 50 sessions were delivered by 21 subject experts. The inaugural sessions were graced by Director Prof. Suhas S. Joshi. The programme proved highly impactful in strengthening participants’ professional capabilities and pedagogical competencies.



Malwa Chemical Conclave

The Malwa Chemical Conclave 2025, supported by BIS, was held at IIT Indore on December 13, 2025. The conclave aimed to strengthen collaboration between academia, industry, and regulatory bodies to address region-specific industrial challenges through research-driven dialogue and knowledge exchange. The event featured expert talks by Mr. Meghdeep Agrawal (Vice President, Safeflex), Mr. Kapil Jat (Senior General Manager, Moira Sariya), Mr. Arpit Jain (Director, Fenton Chemicals), and Dr. Shubhanjali Umrao (Deputy Director, Bureau of Indian Standards), fostering insightful discussions and academic–industrial engagement.



Bridging Languages with Generative Models

IIT Indore organized a two-day international workshop titled “Bridging Languages with Generative Models: Advances in Speech Technology” on December 15–16, 2025. The workshop commenced with an inaugural session graced by Director Prof. Suhas S. Joshi, followed by insightful technical discussions and interactions with eminent speakers. The programme focused on recent advances in generative speech technologies, including Speech-LLMs, zero-shot multilingual TTS and ASR, cross-lingual acoustic modeling, and audio deepfake detection, while also addressing challenges related to industrial deployment of these technologies.



National Seminar on Geosynthetics & Drone Technologies

A three-day ANRF-sponsored National Seminar on “Emerging Applications of Geosynthetics and Drone Technologies in Modern Construction Practices” was organized from December 6–8, 2025. The seminar aimed to highlight the advanced applications of geosynthetics and drone technologies in contemporary construction practices. The programme featured keynote lectures, invited talks, interactive sessions, and a field visit, with participation from distinguished experts, industry professionals, and academicians. It provided a comprehensive platform for knowledge exchange and deliberation on future-ready construction technologies.



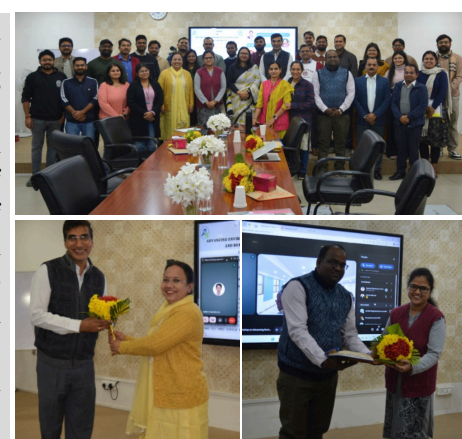
Numerical Techniques for Atmospheric and Space Sciences

A three-day workshop on “Numerical Techniques for Atmospheric and Space Sciences” was organized from December 15–17, 2025, to mark the 10th anniversary of the establishment of the Department of Astronomy, Astrophysics, and Space Engineering (DAASE), IIT Indore. The workshop featured expert lectures on themes including time series analysis, numerical modeling, weather prediction, parameterization, and data assimilation, complemented by hands-on and tutorial sessions that provided participants with practical exposure to relevant numerical techniques.



Advancing Environmental Humanities and Sustainability Workshop

The JPN National Centre of Excellence in Humanities and the Mehta Family School of Sustainability organized a two-day workshop titled “Advancing Environmental Humanities and Sustainability” on December 18–19, 2025. The workshop was conducted for postgraduate students, PhD scholars, and early-career researchers. The programme explored the intersections of cultural heritage studies and modern technologies from the perspectives of water, land, and forest resources. It featured lectures, panel discussions, and hands-on activities that highlighted interdisciplinary approaches to environmental governance. Participants also presented their research through flash talks and poster sessions, fostering meaningful dialogue, capacity building, and collaboration in the fields of environmental humanities and sustainability.



Indo-Finnish Workshop on ICT4AID

A five-day Indo-Finnish Workshop on “Information, Communications & Data Processing Technologies for Response Management in Natural Disasters (ICT4AID)” was successfully hosted from December 8–12, 2025. The workshop brought together eminent experts from Aalto University (Finland), IIT BHU, IIT Guwahati, and IIT Indore, facilitating rich academic and technical exchange. The sessions focused on disaster monitoring, wireless communication, AI/ML-based risk assessment, and early warning systems, with an emphasis on ICT-driven intelligence, collaboration, innovation, and sustainable approaches to disaster management.



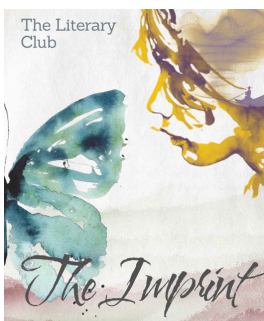
ICISS 2025

The Department of CSE at IIT Indore hosted the 21st International Conference on Information Systems Security (ICISS 2025) from December 16–20, 2025, offering broad engagement in cybersecurity and information systems for academia, students, and industry participants. As part of the event, tutorials and related sessions were conducted by leading researchers and practitioners, addressing topics such as federated learning, malware analysis frameworks, and emerging security challenges. These sessions aimed to deepen participants’ understanding of advanced security techniques and inspired future research, collaboration, and innovation in the field.

STUDENT HIGHLIGHTS

Old Age Home Visit

On November 2, 2025, the Avana Club organized a heartwarming visit to the Jagannath Narayan Shraddha Shram Trust Old Age Home. The day was dedicated to love, laughter, and listening, featuring health checkups, cultural performances, and gift distribution. This initiative fostered deep intergenerational bonds, allowing students to spread joy and compassion while experiencing the profound satisfaction of giving back to the community.

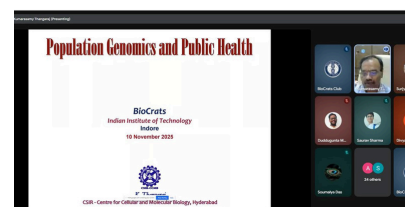
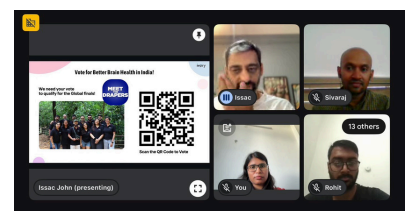


‘Imprint’ Magazine

On November 14, 2025, the Literary Club unveiled the November edition of Imprint, a collection of "bold, thoughtful, and unapologetically original" works. From nostalgic reflections like "Of Ripe and Rot" to gripping narratives like "Truth, Lies and Murder," this issue explores profound themes of reflection, healing, and creativity. It stands as a powerful testament to the diverse voices and imagination of the institute’s student writers.

HealthTech Innovation Talk & Population Genomics Lecture

The BioCrats Club hosted two significant academic sessions this month. On November 10, 2025, renowned scientist Dr. Kumarasamy Thangaraj delivered an insightful lecture on "Population Genomics and Public Health". Subsequently, on November 19, Mr. Issac John, winner of the DHN HealthTech Innovation Challenge 2025, conducted an interactive talk on cognitive decline and digital health innovation. These sessions provided students with cutting-edge perspectives on genomic research and health-tech entrepreneurship.



ASME Student Section

A new initiative has been launched to establish an official ASME (American Society of Mechanical Engineers) Student Section at IIT Indore. This chapter aims to unlock global opportunities for students, including access to international engineering events, design competitions, and exclusive technical resources. The section will facilitate professional networking and career development while strengthening the institute's technical ecosystem.

150 Years of Vande Mataram

To commemorate 150 glorious years of India's National Song, a special gathering was organized on November 7, 2025. The event featured a collective chanting of Vande Mataram, fostering a spirit of unity and patriotism among the students. Attendees also witnessed a live stream of Prime Minister Narendra Modi's address dedicated to this historic occasion.

IITI Secures 3rd Position at Inter IIT Tech Meet 14.0

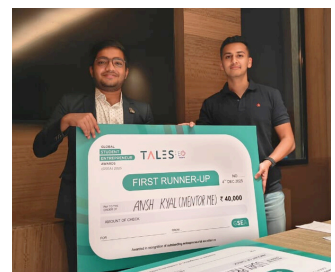
On December 14, 2025, the Indian Institute of Technology Indore marked a historic achievement by securing the Overall 3rd rank at the Inter IIT Tech Meet 14.0, hosted by IIT Patna, with a total score of 2,915 points. This accomplishment represents IIT Indore's best-ever performance at the Inter IIT Tech Meet and its first podium finish among the second-generation IITs at this prestigious national forum.

The IIT Indore contingent delivered an exceptional performance, securing podium positions in seven problem statements, with an impressive medal tally of two gold, two silver, and three bronze medals. Notable highlights included Gold medals in the Ebullient Securities and Qtrino Labs, reflecting the team's depth of technical expertise and innovation. This landmark success was driven by the leadership of General Secretary (Science & Technology) – Satyajeeet Pani, Contingent Leader – Varad Shailendra Pendse, and Deputy Contingent Leaders – Saket Jaiswal and Suryansh Garg, along with all the participants and mentors.



Student Achievements

- Ansh Kyal (B.Tech, MEMS) secured the 1st Runner-Up position and a ₹40,000 cash prize at the Global Student Entrepreneur Awards (GSEA) – Indore Finals, organized by the Entrepreneurs' Organization (EO). He was shortlisted among the top 10 finalists based on business viability and revenue and successfully pitched his startup to industry leaders, reflecting the strong entrepreneurial ecosystem at IIT Indore.
- Shivam Vijai Sharma (B.Tech, Civil Engineering) demonstrated exceptional mathematical aptitude by securing All India Rank 33 in the final round of the Srinivasa Ramanujan Mathematics Competition 2025.
- Team ByteBandits (Krishay Rathaure, Tanish Yadav, Akarsh Raj, and Sumit Modanwal) secured a global rank of 30 at the CSAW CTF Finals, competing against top teams from around the world.
- Sadaf Khan (PhD, Humanities and Social Sciences) published pioneering empirical research on Family Language Policy in urban Indian households in the top-tier journal Current Issues in Language Planning.
- Sahil (PhD, Mathematics) achieved a significant academic milestone with the publication of his research in the prestigious journal Applied and Computational Harmonic Analysis.
- Rahul Naidu (PhD, Mechanical Engineering) won the 1st Prize for his Green Energy poster at the India International Science Festival (IISF) 2025, organized by the Department of Science and Technology, Government of India.
- Buddhudev Ghosh (PhD, CRDT) secured the 3rd Best Presentation Award at the Adani Global Indology Conclave, receiving the award from Shri Nitish Bharadwaj.
- B Sai Sumedha (M.Tech, Water, Climate and Sustainability) received the Best Presentation Award at the HYDRO International Conference 2025, held at NIT Rourkela.
- Asjad Raza (M.Tech, Biosciences and Biomedical Engineering) won the 2nd Prize (Young Student Award) at the International Conference on Trends in Biological Sciences (TIBS-2025), held at Jawaharlal Nehru University, for his work on antibacterial therapy.
- Team SPY Matrix (Yogendra Singh, Soham Pandey, and Paawni Gulati) secured 1st place at the International Invitational Math Optimization Challenge (IIMOC) 2025. Competing against 209 teams worldwide, the team achieved the top global score, placing them in the top 0.5 percentile.



ALUMNI HIGHLIGHTS

Alumni Cell Tenure Change Ceremony

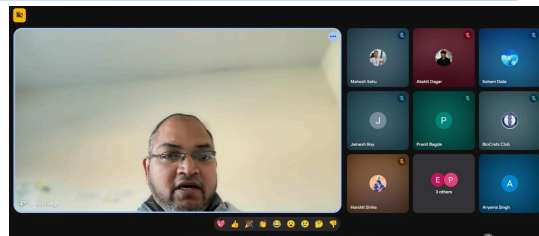
The Tenure Change Ceremony of the Alumni Cell was held on November 1, 2025, marking an important transition. The meeting signified a smooth handover of responsibilities and reflected a collective commitment to build upon the efforts of the outgoing teams. With the commencement of the new tenure, the incoming team assumed charge with a focused vision towards strengthening internal coordination, enhancing institutional processes, and promoting active student engagement. Members of the Alumni Cell played a pivotal role in facilitating the transition, demonstrating commendable teamwork and dedication.

The launch of the latest edition of POD Pulse underscored the importance of consistent communication and systematic documentation within the institute. Overall, the event symbolised continuity, accountability, and growth, setting a positive direction for the new tenure and reaffirming the collective resolve to move forward with clear objectives, improved planning, and a strengthened sense of responsibility among team members.



Alumni Talk

On November 13, 2025, Dr. Amit Kumar Singh (PhD, BSBE, 2019) delivered an alumni talk that reflected IIT Indore's strong and enduring connection with its alumni. The session served as a meaningful bridge between past and present members of the institute community, underscoring the significance of shared academic roots and continued engagement with the institute.



On November 16, 2025, the Alumni Robotics Club organised an interactive session with Anjali Parashar (B.Tech, Mechanical Engineering, 2020), currently a PhD researcher at REALM, MIT. The session reflected IIT Indore's continued efforts to connect students with alumni actively engaged in advanced research and academic pursuits.

Magnum Opus 2026

Magnum Opus '26, the Annual Alumni Gathering of IIT Indore, will be organized on January 31 and February 1, 2026, at the IIT Indore campus, centered around the theme "Roots and Routes." The event serves as a significant platform for alumni and the institute to reconnect, strengthen long-standing relationships, and celebrate their shared association with the campus. Magnum Opus fosters meaningful interactions, renewed bonds, and a deep sense of belonging among former and current members of the IIT Indore community.



MAGNUM OPUS

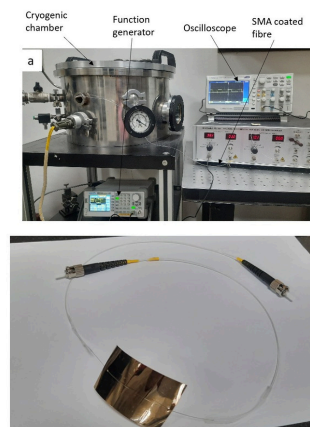
Roots and Routes

Register Now:



Advanced Cryogenic Optical Fiber Sensor for Space Missions

A research team at IIT Indore has developed a cryogenic optical fiber sensor capable of operating at temperatures as low as -270°C , making it suitable for future space missions. The work was carried out at the Mechatronics and Instrumentation Laboratory, Department of Mechanical Engineering, under the leadership of Prof. I. A. Palani, with Dr. Nandini Patra as the lead researcher. Conventional metal-coated sensors fail below -150°C and show limited reliability under extreme cryogenic conditions. To address this, the team introduced a shape memory alloy (SMA) coating on optical fibers, significantly enhancing sensitivity and performance. The sensor has applications in LPG pipeline monitoring, leak and flow detection, and temperature and liquid-level measurement in cryogenic fuel tanks of spacecraft. Developed in collaboration with LPSC, Bengaluru, the research highlights IIT Indore's contribution to indigenous space and aerospace technologies.



AI-Enabled Urban Flood Risk Monitoring Application

Researchers at IIT Indore have developed an AI-enabled urban flood risk monitoring application aimed at strengthening flood resilience in Indian smart cities. The work was led by Prof. Manish Kumar Goyal and research scholar Vijay Jain from the Department of Civil Engineering. The application enables year-wise monitoring of urban flood risk from 1981 onwards using satellite-based datasets and advanced geospatial analysis. Designed to overcome the limitations of conventional flood assessment approaches, the tool integrates rainfall patterns with hydrological and topographical parameters to estimate floodwater depth and identify high-risk urban localities. In addition, the application assesses vulnerability by accounting for factors such as proximity to water bodies, elevation, slope, vegetation cover, soil moisture, and population exposure. By integrating hazard, vulnerability, and exposure components, it generates annual flood risk scores that can support urban planning, early warning systems, and disaster preparedness initiatives. The innovation also contributes to broader climate resilience efforts, including heatwave and disaster risk management.

Deep-Tech Incubation and Innovation Centre

IIT Indore, through the IITI DRISHTI CPS Foundation, launched an Incubation and Innovation Centre at Sinhasa IT Park, Indore, with a joint investment of approximately ₹10 crore. Inaugurated by Chief Minister Mohan Yadav, the centre aims to strengthen the state's deep-tech innovation and entrepreneurship ecosystem. The initiative is a collaboration between the IITI DRISHTI CPS Foundation, Technology Translation Research Park of IIT Indore, and the Madhya Pradesh State Electronics Development Corporation (MPSEDC) under the Madhya Pradesh Department of Science and Technology. Spread across 5,000 square feet, the facility offers modern incubation infrastructure and an advanced intelligent manufacturing laboratory. Over the next seven years, it aims to support 100 startups, generate 200–300 jobs, and train 300 innovators, enhancing research-to-market translation.

SAKSHAM Review Meeting

IIT Indore hosted Dr. Shivkumar Kalyanaraman, CEO, Anusandhan National Research Foundation (ANRF), on December 11, 2025, for a SAKSHAM review meeting assessing progress across IIT Indore and six spoke institutions. Director Prof. Suhas S. Joshi and Prof. Abhirup Datta, Dean R&D and Project Director, formally felicitated Dr. Kalyanaraman, and a new SAKSHAM batch was inaugurated. The meeting reviewed activities under the ₹101 crore SAKSHAM initiative spanning Advanced Materials, Environmental Sustainability and Energy, and Healthcare and Medical Technologies, with discussions focusing on collaboration, research visibility, effective execution, and societal impact.



FACULTY HIGHLIGHTS

Patents

Dr. Abhijeet Joshi, Tanmay Vyas, Surbhi Jaiswal, Prashant Kodgire

Title: “Recombinant Organophosphate Hydrolyzing Enzyme Immobilized Fluorescent Composites for the Detection and Degradation of Organophosphate Compounds”

Prof. I. A. Palani, Arpit Kumar Singh, Krishnpal Singh Tomar, Gaurav, Suhas Joshi

Title: “A Method of Printing Pixelated Silicon Carbide Segments”

Prof. Chandresh Kumar Maurya, IITI DRISHTI CPS Foundation, Indian Institute of Technology Indore

Title: “System and Method for Speech-to-Text Translation Based on Continual Learning Technique”

Prof. Amit Kumar, Krishna Singh

Title: “A Drug Combination for Effective Therapeutic Treatment and Method Thereof”

Prof. Rupesh Devan, Dr. Ravindra Jangir, Suman Yadav

Title: “Process for Industrial-Scale Production of Pure Ti_2AlC MAX Phase at Ambient Pressure Conditions and Ti_3C-Tx MXene Thereof”

Dr. Ajay Kumar Kushwaha, Dr. Lokanath Mohapatra, Akshay Kumar Sonwane

Title: “A Process for Green Hydrogen Production Based on Magnetic Field Driven Overpotential Reduction in Electrodeposited Ni-Co and Ni-Fe Alloy Electrodes”

Dr. Santosh Kumar Sahu, Vivek Saxena, Kiran N. Poojary, Chenthil Kumar S., Shreshth Mishra, Manjunatha U.

Title: “A Phase Change Composite and Process for Preparation Thereof”

Prof. Ram Bilas Pachori, M Sabarimalai Manikandan, Nabasmita Phukan

Title: “Systems and Methods for Contextual Information Aware Physiological Parameter Analysis and Intelligent Human Disease Prediction”

Prof. Devendra Laxmanrao Deshmukh, Dr. Devashish Chorey, Constanza Cendon Contreras, Dr. Dag Hanstorp, Dr. Yogeshwar Nath Mishra

Title: “Continuous Snapshots-Based Compressed Optical Streaking Ultrafast Photography System with Simultaneous Referencing”

Prof. Vimal Bhatia, Rangeet Mitra

Title: “Multi-User Downlink NOMA Communication System and Method Thereof”

Achievements



Prof. Rupesh S. Devan, from the Department of Metallurgical Engineering and Materials Science, IIT Indore, has been awarded the MRSI Medal 2025 by the Materials Research Society of India for his significant contributions to Materials Science and Engineering.

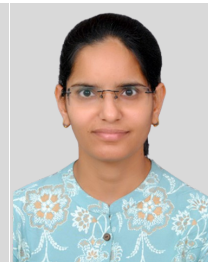


Prof. Anirban Sengupta, from the Department of Computer Science and Engineering, IIT Indore, received the IEEE Computer Society Best Paper Award (Winner) at iSES 2025, with his research securing 1st place among 217 submissions worldwide.



Prof. I. A. Palani, from the Department of Mechanical Engineering, IIT Indore, was awarded the Suzuki Next Bharat Fellowship 2025 by the Suzuki Innovation Centre, recognizing excellence in research and innovation.

Dr. **Pramila Jakhar**, a PhD alumna (Batch of 2019) from the Department of Electrical Engineering, IIT Indore, graciously contributed all expenses related to the publication and printing of this edition of **POD Pulse**. Team POD Pulse sincerely thanks her for this generous support and continued association with the institution.



We request our esteemed alumni to kindly contribute towards Alumni Cell initiatives such as *Magnum Opus*, Newsletter and Magazine printing, and other activities.

For feedback, contact +91 89498 98072 (Kavyansh), or email at newsletter@iiti.ac.in



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Volunteers: Sarthak Koranne, Saiteja Vemula, Shreyas Deosthali, Jainesh Roy

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