



INSTITUTE HIGHLIGHTS

Celebrating Excellence: 12th Convocation

The 12th convocation was held on July 13, 2024 with Dr. Samir V Kamat, Secretary DDR&D and Chairman DRDO as Chief Guest. Dr. K Sivan, Chairperson, BoG presided the ceremony with Prof. Suhas S. Joshi, Director in attendance. A total of 673 students received their degrees, marking the largest graduating class in IIT Indore's history. Mukul Jain received the President of India Gold Medal. First two batches of MS in Data Science and Management, jointly with IIM Indore, also graduated.



New Beginnings: Genesis 2024

Genesis - The meticulously curated six-day freshers programme at IIT Indore, aimed to seamlessly integrate new students and foster camaraderie. This immersive experience blended expert-led discussions on mental health and adolescent psychology with invigorating physical training in yoga, athletics, and sports. Team building workshops, such as aeromodelling and bridge assembly, aimed at challenging students' technical dexterity and ingenuity took centre stage. The vibrant cultural showcase introduced various student clubs, while tech clubs unveiled cutting-edge innovations. A visit to Mhow's Military War College and Airfield broadened perspectives, urging students to align academic pursuits with national interests.



IITI Celebrates 75th Independence Day

India's 78th Independence Day was commemorated with a grand Tech Expo and colourful, patriotic cultural events. The day began with an inspiring address by Director, Prof. Suhas S. Joshi. Cultural performances included music, poetry, Kathak and contemporary dance honouring India's athletes and the poignant stage play Jeeyo Azaad Ya Maro Shaheed. The Tech Expo 2024 showcased student ingenuity, featuring a mesmerising Tesla Coil synced to music, a charming Namaste Robot from the Robotics Club, and an autonomous IGVC vehicle prototype. Innovative projects such as AI-driven chatbots and virtual clothing trials highlighted the creativity and collaborative spirit of IIT Indore's talented minds, reinforcing the institution's commitment to innovation.



Alumni Meet



An Alumni Meet was convened on August 24, 2024, in Delhi with over 60 alumni from various batches and disciplines. This meet served as an excellent platform for the alumni to reconnect with their peers.

E-Summit: Visionary Vault

The Visionary Vault, part of E-Summit '24, featured industry leaders sharing insights on success. MOTION's founder, Nitin Vijay, emphasised deliberate decision-making and lifelong learning. Swati Ganeti, founder of Master's Union, highlighted her "no-regret policy" and the transformative nature of business education. Rajesh Dembla, founder of Zoodle, stressed adaptability and intuition in business. Musician Deepanshu Raj, aka IQlipse Nova, shared his journey to global recognition, underscoring the balance between academics and art.



IIT Indore delegation visits international universities

IIT Indore has signed MoUs with the Asian Institute of Technology, Thailand; University of Transport Technology, Hanoi and Tribhuvan University, Nepal, to promote student and faculty exchanges, collaborative research, and the sharing of educational resources. These partnerships aim to enhance academic collaboration and provide international exposure for both institutions.

हिंदी पखवाड़ा 2024



भारतीय प्रौद्योगिकी संस्थान इंदौर की राजभाषा समिति द्वारा 17- 27 सितंबर, 2024 के बीच हिंदी पखवाड़ा - 2024 का सफलतापूर्वक आयोजन किया गया। इस दौरान, संस्थान के निदेशक प्रोफेसर सुहास एस. जोशी मुख्य अतिथि के रूप में उपस्थित रहे। वहीं, इस अवसर पर सम्मानित अतिथि के रूप में संस्थान के अधिष्ठाता (प्रशासन) प्रोफेसर संदीप चौधरी और विशिष्ट अतिथि के रूप में संस्थान के कुलसचिव श्री एस. पी. होता भी मौजूद थे। साथ ही, राजभाषा समिति

के संयोजक प्रोफेसर राजेश कुमार, सम्मानित सदस्य प्रोफेसर शरद गुप्ता, राजभाषा अधिकारी श्री राजीव पाण्डेय, अन्य संकाय सदस्यगण, अधिकारीगण, कर्मचारीगण, छात्र इत्यादि भी उपस्थित थे।

Centre for Narmada River Basin Management Studies



On July 14, 2024, the Ministry of Jal Shakti launched the Center for Narmada River Basin Management Studies as a part of its initiative to manage the Narmada River Basin. This

ambitious project aims to map the entire 1,000-kilometre basin in Madhya Pradesh.

National Space Day (DAASE)

On August 21, 2024, IIT Indore's Department of Astronomy, Astrophysics, and Space Engineering (DAASE) celebrated



National Space Day with engaging events for students from various colleges and schools. Activities included an interactive quiz on Indian space scientists, a poster exhibition, and workshops for constructing telescopes. The director observed spots through a specialised telescope, which was a highlight. Former ISRO Chairman A.S. Kiran Kumar gave a virtual address, emphasising the crucial role of youth in India's space exploration and the organisation's achievements.

Prof. Kapil Ahuja honoured with National Teacher Award

Professor Kapil Ahuja, faculty at Department of Computer Science and Engineering, IIT Indore was honoured with the prestigious National Teacher Award 2024 by the Honourable President of India. Professor Ahuja distinguished himself through his structured classes, regularly updated content on Google Drive, research projects that enhanced students' critical thinking, and his approach to informal feedback. Prof. Kapil Ahuja leads the Mathematics of Data Science and Simulation Lab (MODSS).



Inbound International Students

Inbound international students from the University of Plymouth, UK, participated in a four-week research program at IIT Indore, focused on sustainable concrete construction as part of the SPARC-UKIERI initiative. Under the leadership of Dr. Boksun Kim, the team collaborated closely with IIT Indore's Dr. Sandeep Chaudhary and Dr. Sanchit Gupta, fostering innovation and inspiring future researchers.



Training Students for UAS Technology

IIT Indore, under the Ministry of Electronics and Information Technology's SwaYaan project, aims to train 1,000 students in Unmanned Aircraft Systems (UAS) technology by 2027. The curriculum, focused on drone electronics, consists of 36 intensive six-day bootcamps, each accommodating 30 students. The training encompasses theoretical and practical knowledge in drone operations, applications, safety procedures, and regulatory frameworks.

BioE3 (Biotechnology for Economy, Environment and Employment) Policy Inaugural Meet

The BioE3 policy is India's first policy in Biotech that encompasses innovation-driven support for research and development (R&D) and entrepreneurship. The Policy focused on Net Zero carbon economy and Lifestyle for Environment aims to promote a Circular Bioeconomy and guide India towards accelerated green growth. The inaugural meeting of the DBT-Sectoral Expert Committee on Biomanufacturing of Precision Biotherapeutics, specifically focusing on monoclonal antibodies, took place on August 11, 2023, at IIT Indore.

38th Inter-IIT Aquatics Meet

The Inaugural Ceremony was held on September 30th, 2024. Chief guest for the event was Dr. Kannan Pugazhendhi, a distinguished sports physician who served with the Indian cricket team in 1989, the Atlanta Olympics in 1996, and the Indian hockey team during the 2002 World Cup. 17 IIT teams are participating.



Workshop and Lectures

Prof. N.R. Bhanumurthy, The National Institute of Public Finance and Policy, New Delhi gave a lecture titled "Analysing Union Budget 2024-2025" on July 24, 2024.

Prof. Arun Kumar (former Prof. TIFR; former VC Punjab University) gave a talk titled Homi Bhabha's Life and Times: A Comprehension as part of INSA series on August 02, 2024.

The Internal Complaints Committee (ICC) and the Women Cell of IIT Indore conducted three days Awareness and Training Programme for students on the PoSH Act (Prevention of Sexual Harassment Act) from August 28-30, 2024.

Dr. Sanchari Thakur, Università degli Studi di Trento, Italy gave a lecture titled "Radar Sounders for Planetary Exploration: Past, Present and Future" on August 28, 2024.

Padma Shri Prof. Jemmis Eluvathingal Devassy, IISc Bangalore, gave a lecture titled "Inquisitive Minds and Innovative Questions" as part of Vimarsh Public Lecture Series on August 29, 2024.

Prof. Mandar Deshmukh, TIFR, gave a lecture on "Superconducting van der Waals devices for quantum technology" on 29th August 2024.

Prof. Giles Hammond, University of Glasgow, delivered a talk on "Gravitational Wave Astronomy" on September 04th, 2024.

Mr. Girish Palshikar, Chief Scientist at TCS Research, delivered a talk titled "Advanced Techniques in Fraud Detection: Insights from Stock Market Analysis" on September 06, 2024.

Dr. Pravata Kumar Mohanty, TIFR, gave a lecture titled "Probing the Century-Old Mystery of Cosmic Ray Origin" on September 09, 2024.

Prof. P. Arumugam, IIT Roorkee, gave a lecture titled "Quantum Information and Computing relevant to Femtoscale Systems" on September 10, 2024.

Prof. Projit B. Mukharji, Ashoka University and **Dr. Suvabrata Sarkar**, Rabindra Bharati University, gave lectures as part of "History of Science: Culture, Society and Technology" seminar on September 13, 2024.

Dr. Aravind Harikumar from NTU, Singapore gave a talk titled "High-Tech Vegetation Surveillance: Harnessing Drones and Farm Robotics for Advanced Vegetation Dynamics Research" on September 18, 2024.

The JPN National Centre of Excellence in the Humanities and the Office of International Affairs, IIT Indore organised a two day workshop titled "Digital Humanities and Infrastructures: Tools, Archives & Theory" with distinguished scholars from University of Oxford, Freie Universität Berlin, Heidelberg University, and FLAME University from September 18-19, 2024.

Student Highlights

Bharatiya Antariksh Hackathon

Mr. Aromal P & Mr. Biki Ram from DAASE, IIT Indore received third prize in Bhartiya Antariksh Hackathon organised by ISRO. They were felicitated by the Hon. President of India during the National Space Day celebrations at Bharat Mandapam.

UG/PG/PhD students- Awards and Scholarships

Ms. Kumari Sunita, B.Tech Mechanical was awarded IITI outbound fellowship award (2023-2024).

Ms. Tanisha Jitendra Sahu, B.Tech CSE was awarded the Generation Google Scholarship: for women in computer science (Asia Pacific/APAC).

Ms. Tannu, B.Tech Civil Engineering was awarded the MITACS Globalink Research Scholarship 2024.

Mr. Pulkit Gupta, B.Tech Mechanical, was awarded the MITACS Globalink Research Scholarship 2024.

Mr. Jugal Shah, B.Tech Mechanical, was awarded the ERASMUS Scholarship with International Mobility Grant.

Mr. Krish Agrawal, B.Tech CSE, was ranked 8th Internationally in eCTF2024 Competition by MITRE Corporation.

Mr. PV Sekhar, Mahendrakar Gaurav, G Akash, Ashutosh S, Ruthvik S and Samyak Dhyani, B.Tech CSE, were awarded the Alpha Gred Scholarship.

Mr. Anuj Kothari (ChE) and **Mayank Yadav** (EE), B.Tech, finished under top 5 in IQC World Finals.

Mr. Dibya Prakash Panda, PhD (Linguistics), was awarded the Prof. Vennelakanti Prakasam Award for the best paper on Systemic Functional Linguistics.

Mr. Jitamitra Behera, PhD (Economics), was awarded the DAAD Scholarship.

Ms. Priya Ghosh, PhD (BSBE), was awarded the DAAD Scholarship.

Mr. Manivendra Kumar, PhD (English), was awarded the Charles Wallace India Scholarship, administered by the British Council.

Mr. Patinavalasa Megh Sainadh, PhD (EE), was awarded the Young Scientist Award.

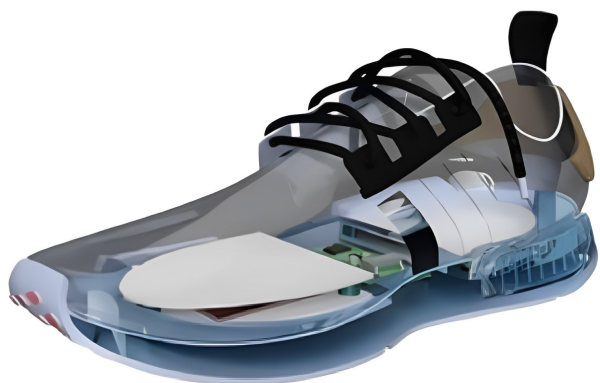


IQC World Finals

The World Quant Championship finalists celebrated their achievement as a testament to their hard work. The three-stage competition utilised the WorldQuant Brain platform for strategy backtesting. Preparation started in their first year, with guidance from IIT Indore mentors, amid challenges like balancing studies. They emphasised continuous learning and a positive mindset as key takeaways and plan to explore finance applications after the competition.

From Ideation to Reality!

The electric boots, a soldier assistance system led by Prof. Palani and a team from the Mechatronics Lab, have revolutionised technology by lightening the load soldiers carry. In collaboration with DRDO labs, they expanded into bio-mimicking turtle robots and morphing wings. Their success in developing TENGs (Triboelectric Nanogenerators) resulted in more efficient and effective solutions compared to traditional piezoelectric materials. The current applications of electric boots include generating power as soldiers walk, reducing fatigue, and powering gadgets in extreme conditions. Another significant achievement is the adaptation of this equipment for healthcare, with potential use in Parkinson's disease detection via gait analysis. Despite material selection and voltage management challenges, the team successfully developed custom circuits and optimised surface charge density using laser treatments. Field testing with DRDO is underway, and future developments will focus on enhancing reliability in extreme conditions.



Development of compound to combat drug-resistant TB

A team of researchers led by Prof. Venkatesh Chelvam from the Department of Chemistry and Prof. Avinash Sonawne from the Department of Biosciences and Biomedical Engineering, faculty at IIT Indore, developed over 150 new compounds to combat drug-resistant TB as part of their drug development program. These compounds target drug-resistant MDR and XDR TB, effectively working in low concentrations. The compounds have shown promising results in bacterial cultures and are undergoing testing on mice. Their development method has been patented in India and the USA to treat various diseases.

Imaging Tech - Capturing Fast Moving Particles

In collaboration with DRDO, IIT Indore has developed a high-speed imaging technique to capture images of fast-moving particles during an explosion. Using the principles of Digital Inline Holography, this technique can capture images with exposure times as low as 50 nanoseconds and allows recording up to 700,000 frames per second. According to Prof. Devendra Deshmukh, faculty at IIT-I, the high-frequency light source chosen for its ability to penetrate dense dust clouds is the core of this innovation, thus enabling the capture of detailed frames of objects even within dust or combustion clouds. This technology has potential use in the aerospace industry, where high-speed imaging helps in studying fuel spray patterns and the impact of debris on spacecraft. It also has significant use in defence research, improving both offensive and defensive technologies by analysing captured pictures to visualise fragment behaviour after an explosion. Additionally, it is used in industries to analyse high-speed processes such as material cutting and spray formation.

Faculty Patents

- Apurba Kumar Das, Shaibal Mukherjee- ' π -Conjugated Compound for Resistive Switching, Device, and Method of Fabrication.'
- Trapti Jain, Adnan Iqbal - 'System and Method for Quantifying the Angular Stability Status of a Power Grid.'
- Srivathsan Vasudevan, Suhel Khan - 'A multiwavelength pulsed laser excitation photoacoustic (PA) screening apparatus.'
- Vimal Bhatia - 'Method, device and apparatus from managing phone/device profile based on an event.'
- Vimal Bhatia - 'Method and apparatus for low complexity Natural Gradient-based OFDM Channel Estimator.'
- Anirban Sengupta - 'Embedding Watermark based on Multi-Variable Signature Encoding at Behaviour Level for Reusable IP Core Protection.'
- Hem Chandra Jha, Deeksha Tiwari - 'A kit for screening of early phase detection of Epstein barr virus-induced Alzheimer's disease.'

POD Pulse Team:

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