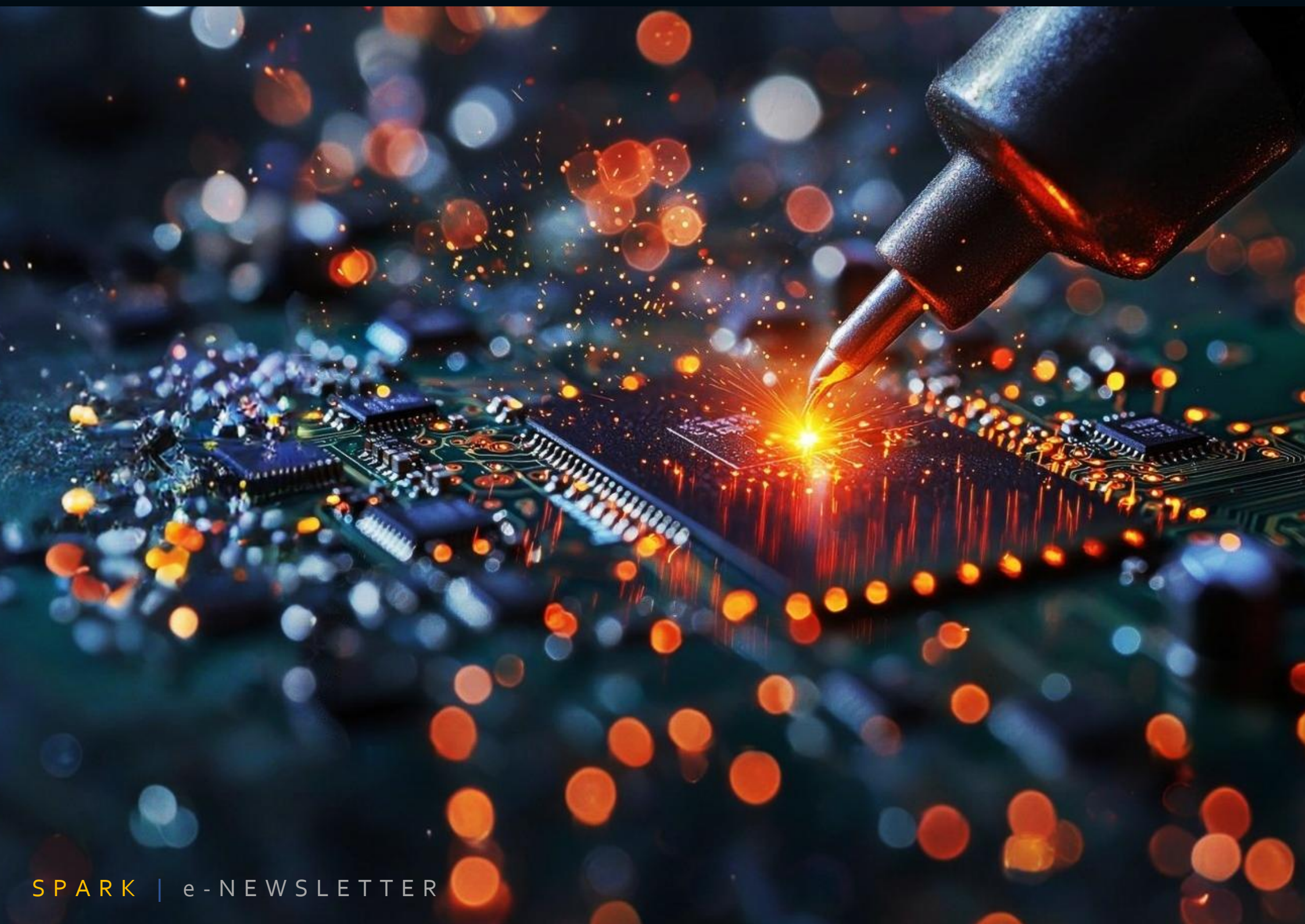


SPARK



SPARK | e-NEWSLETTER

DEPARTMENT OF ELECTRONICS ENGINEERING

INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD

DECEMBER 2025
12th EDITION

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FROM THE HOD DESK

Dear Readers,

Happy New Year! We are excited to update you on the overall progress and highlight a few milestones that the Department of Electronics Engineering reached in December 2025.

ELEXCOM 2025 marked a historic milestone as the first Centenary Conference organized by the Department of Electronics Engineering in the 100th year of IIT (ISM), Dhanbad, bringing together academicians, researchers, and industry professionals from India and abroad. In continuation of its academic initiatives, the Department conducted a six-day AICTE-ATAL Online Faculty Development Program on "Next Generation Communication for 6G and Beyond" in December 2025, coordinated by Prof. Jaisingh Thangaraj and Prof. Devendra Chack.

During the same period, a five-day intensive bootcamp on Electronics for Unmanned Aerial Systems, Sensors, and Communication was held at the Drone Training Node, Modi Garrison, Manipur, as part of a national capacity-building effort to enhance hands-on skills for defence and internal security forces. Simultaneously, fostering academic exchange, Prof. Manoj Kumar, Prof. Jeevesh Kumar, and Prof. Y. M. Asha Latha visited other institutions, attended conferences, and shared their insights, while Prof. Shalu Rani contributed through the publication of research papers.

Furthermore, the Department celebrated notable achievements, including the Inder Mohan Thapar Research (IMTR) Award received by former PhD scholar Dr. Pankaj Kumar during the Centenary Celebrations of IIT (ISM) Dhanbad, and the commendable performance of Mr. Bappa Ghosh at the Inter-IIT Staff Sports Meet. Finally, it was our pleasure to welcome Prof. Prem Vrat, the Chair of the Board of Governors, who visited the Department to interact and exchange ideas for the development of the department.

A promising and academically rewarding opportunity is available for bright and motivated individuals to pursue a PhD programme, with monthly interviews ensuring continuous and merit-driven selection.

Please find the Newsletter for detailed updates and give your valuable feedback to fertilise us to be bigger and better.

Wish you all the best!

*Prof. Ravi Kumar Gangwar
HoD, Department of Electronics Engineering,
IIT(ISM) Dhanbad*



ELEXCOM'25



ELEXCOM 2025 marked a historic milestone as the 1st Centenary Conference organized in the 101st year of IIT (ISM), Dhanbad, bringing together academicians, researchers and industry professionals from across India and abroad. The conference received 235 research paper submissions, out of which 132 papers were selected for oral presentation, with participants largely comprising faculty members from reputed institutions nationwide. The majority of contributions were in the areas of Intelligent Computation and Automation, including Artificial Intelligence and related emerging technologies. The central theme of the conference, “Applications of Quantum Technologies and Cyber-Physical Systems,” strongly aligned with the Government of India’s vision of Viksit Bharat and the National Quantum Mission.

The conference was inaugurated by the Chief Guest, Shri M. Vellai Pandi, Director General, Ministry of Electronics and Information Technology (MeitY), New Delhi. The event was chaired by Prof. Ravi Kumar Gangwar, Head of the Department of Electronics Engineering, IIT (ISM) Dhanbad, with Prof. Devendra Chack, Prof. Jaish Singh Thangaraj, and Prof. Himanshu Bhusan Mishra serving as Organising Chairs. A special session focused on the Dhanbad sector highlighted Digital and Smart Mining with Integrated Electrical and Automation Systems, addressing region-specific industrial needs. The conference featured keynote addresses by Prof. A. Chockalingam (IISc Bangalore) and Prof. Debashish Datta (IIT Kharagpur), along with invited talks from distinguished academicians and industry experts from India, the USA, China, France, and leading technological organizations, including Keysight Technologies. ELEXCOM 2025 was supported and funded by the Ministry of Electronics and Information Technology, DRDO, TEXMin, Eastern Coalfields Limited, Kolkata, and other private industries, underscoring its national importance and strong industry-academia collaboration.





Prof. Keka Ojha
Dean, Continuing Education Programme

AICTE Training and Learning (ATAL) Academy
Sponsored

Six Days Online Faculty Development Program
on

“Next Generation Communication for 6G and Beyond”

Dec. 01, 2025 to Dec. 06, 2025



Prof. Ravi Kumar Gangwar
Professor and Head

Organised By
Department of Electronics Engineering
Indian Institute of Technology (Indian School of Mines),
Dhanbad, India 826004



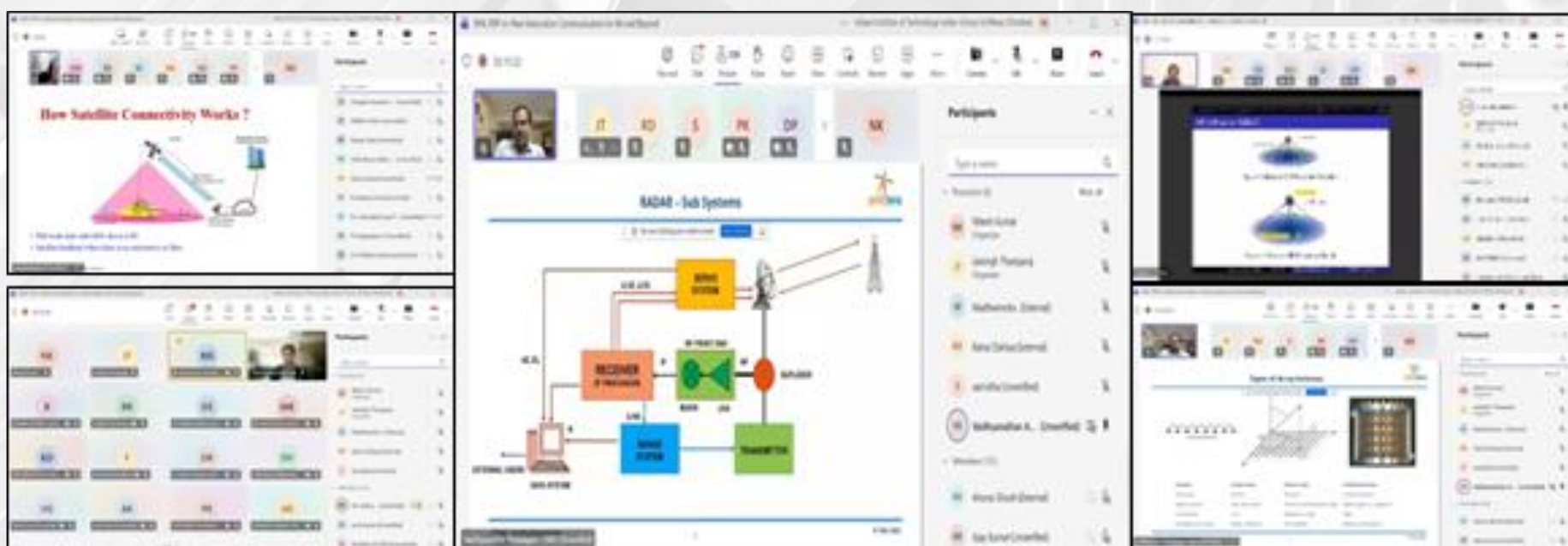
Coordinator
Prof. Jaisingh Thangaraj
Associate Professor



Co - Coordinator
Prof. Devendra Chack
Associate Professor

FACULTY DEVELOPMENT PROGRAM

The Department of Electronics Engineering successfully organized a six-day AICTE Training and Learning (ATAL) Online Faculty Development Program (FDP) on “Next Generation Communication for 6G and Beyond” in December 2025, under the coordination of Prof. Jaisingh Thangaraj, FDP Coordinator and Prof. Devendra Chack, FDP Co-Coordinator. The FDP brought together eminent academicians, scientists and industry experts from various organizations such as IIT Madras, IIT (ISM) Dhanbad, NIT Tiruchirappalli, Samsung R&D, ISRO, National Physical Laboratory and international research organizations. The program covered emerging topics including optical and terahertz communication, WiFi-7, 5G/6G applications, drone communication, space radar systems and RF technologies. The event witnessed enthusiastic participation from faculty members, research scholars and professionals across the country, fostering knowledge sharing, interdisciplinary learning and research collaboration. The FDP concluded successfully with an online assessment, feedback session and valedictory function, receiving highly positive responses from participants.



BOOTCAMP



A five-day intensive bootcamp on Electronics for Unmanned Aerial Systems, Sensors and Communication was successfully conducted at the Drone Training Node, Modi Garrison, Manipur in December 2025. The program was organised as part of a national capacity building initiative aimed at strengthening hands on operational and technical competencies in unmanned aerial systems for defence and internal security forces.

The bootcamp witnessed active participation from a total of 154 personnel drawn from Assam Rifles, CRPF, BSF, Manipur Police, and Rifles Women. The training was structured as a balanced combination of classroom lectures and extensive hands-on practical sessions, ensuring strong conceptual grounding along with operational confidence.

The theoretical modules covered fundamentals of UAV systems, embedded electronics, aerodynamics, control systems, antennas, GPS, sensors, AI and ML applications in drones, FPV systems, VTOL concepts, anti-drone systems, and defence-oriented UAV applications. These sessions were directly aligned with the daily practical activities, enabling participants to immediately apply theoretical concepts to real hardware and flight operations.

A major highlight of the bootcamp was the extensive hands-on assembly and flight-testing component. Participants successfully assembled and flew a total of 20 quadcopters, 1 hexacopter, and 3 FPV drones during training. In addition, a programmable drone platform was utilised to demonstrate autonomous capabilities, including face tracking and gesture-based control, showcasing the practical integration of computer vision and onboard processing. A drone-based dropping mechanism was also demonstrated, providing participants exposure to payload delivery concepts relevant to tactical and logistical applications.

Practical sessions included drone assembly from scratch, GPS and sensor integration, calibration of transmitters and motors, FPV drone assembly, manual and autonomous flight testing, and system level troubleshooting. Multiple flight-testing sessions were conducted to ensure participants gained confidence in real world UAV operations under supervised conditions.

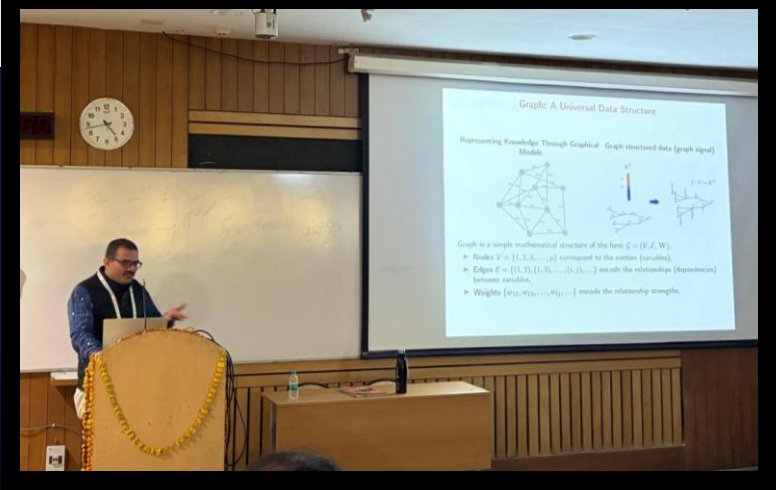
Overall, the bootcamp successfully met its objectives of enhancing technical understanding, operational readiness and hands on proficiency in unmanned aerial systems among defence and security personnel.





EXCHANGING IDEAS AND INNOVATIONS

Prof. Manoj Kumar delivered a keynote talk at PREMI 2025, held at IIT Delhi, on Graph Dimensionality Reduction, with a special focus on graph coarsening techniques. In his talk, he highlighted the theoretical foundations and practical significance of graph coarsening for handling large-scale graph data, emphasizing its role in improving computational efficiency while preserving essential structural properties. The keynote provided valuable insights into current challenges and emerging research directions in graph-based learning and analysis and was well received by the academic community attending the conference.



Prof. Y. M. Asha Latha delivered a guest lecture on “RF Power Amplifiers for 5G/6G Technologies” at the School of Electronics Engineering (SENSE), Vellore Institute of Technology VIT-AP University in December 2025. As part of her visit, she interacted with students and faculty members, sharing valuable insights into current academic and research trends in RF and wireless technologies. The session aimed to inspire young minds to pursue advanced studies and careers in the field of electronics, while also fostering stronger academic collaboration between institutions.

Prof. Manoj Kumar served as a Guest Lecturer in the Online Refresher Course “AI & Machine Learning Mastery: A Practical Refresher Course”, conducted under the UGC Malaviya Mission Teacher Training Programme (MM-TTP) at IIT (BHU) Varanasi, in December 2025. He delivered four expert sessions, offering practical perspectives and insights into contemporary AI and Machine Learning, which greatly benefited the participating faculty members.

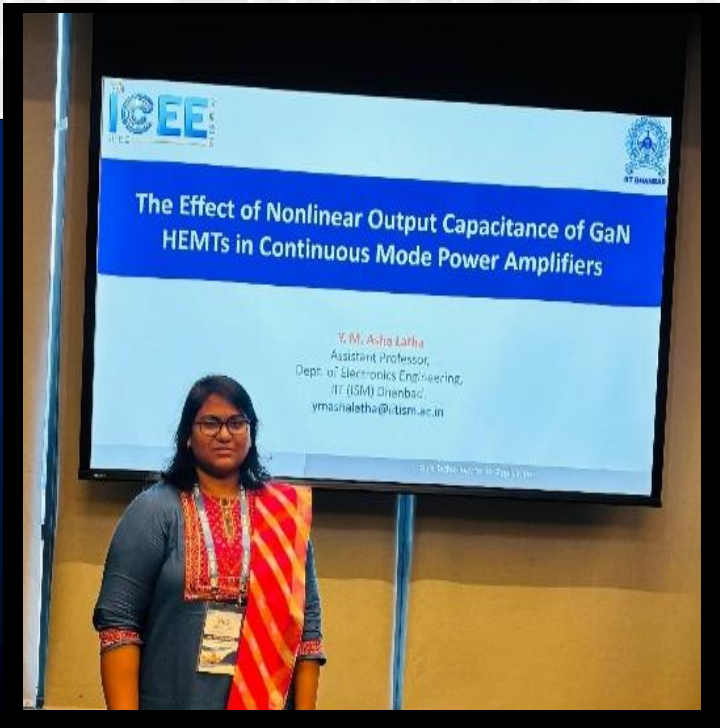




EXCHANGING IDEAS AND INNOVATIONS

Prof. Y. M. Asha Latha delivered an invited talk titled “*The Effect of Nonlinear Output Capacitance of GaN HEMTs in Continuous Mode Power Amplifiers*” at the 7th IEEE International Conference on Emerging Electronics (ICEE 2025), held in Bengaluru in December 2025.

In her presentation, Prof. Asha Latha emphasized how the nonlinear output capacitance of GaN HEMTs can be effectively harnessed to enhance the efficiency of RF power amplifiers operating in continuous mode. The conference provided an excellent platform for engaging discussions with researchers, academicians, industry professionals, and startup innovators, fostering the exchange of ideas on emerging challenges and future directions in the field of electronics and RF design.



Prof. Jeevesh Kumar attended the 7th International Conference on Emerging Electronics in December 2025 along with his research group. At the conference, he presented an invited talk titled “*Vacancy-Assisted Contact Resistance and Bandgap Engineering in Graphene Devices*” under the 2D Materials Technology track, highlighting key findings and insights from his recent research. In addition, his PhD student, Yamala Harsha Vardhan Naidu, presented his research findings at the Student Research Forum (SRF), contributing to scholarly discussions and receiving valuable feedback from experts in the field.



Aarti Dahiya, Shalu Rani, Sanjay Kumar, and Themis Prodromakis, "Low-voltage-Driven Memristor Framework for Efficient Neuromorphic Computation with STDP Functionality", *Frontiers in Nanotechnology-Nanoelectronics*, vol. 7, no. 1723433, pp. 1-15, 2025, <https://doi.org/10.3389/fnano.2025.1723433>

Low-voltage-Driven Memristor Framework for Efficient Neuromorphic Computation with STDP Functionality

Existing challenges

The existing analytical model framework restricted only to the fundamental memristor characteristics and required significantly higher input voltage. Additionally, all these models have not demonstrated detailed parametric evaluation, and crucial neuromorphic computing characteristics

Methodology

- MATLAB simulation tool is used to simulate the memristor fundamental characteristics and extending up to neuromorphic computing characteristics such as PPF, STM to LTM transition, potentiation and depression, re-stimulation process and STDP functionality.

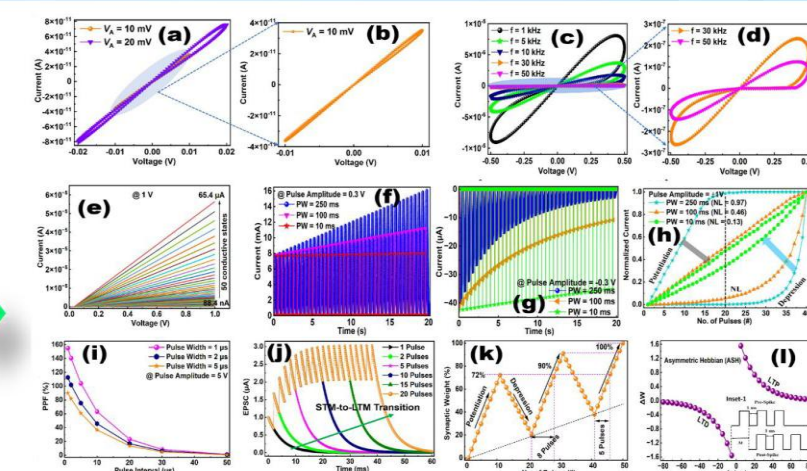


Fig 1. Resistive switching responses at different applied voltages: (a) 10-20 mV, (b) magnified 10 mV, Frequency-dependent switching characteristic ranging from (c) 1 kHz to 50 kHz, (d) magnified 30 kHz to 50 kHz, (e) multiple conducting states, Current tuneability response of the memristor framework under the pulse amplitude of: (f) 0.3 V, (g) -0.3 V, (h) Normalized synaptic current behaviors at pulse amplitude of ± 0.8 V with different PWs 250, 100, 10 ms to compute NL factor, (i) PPF as a function of pulse width, (j) STM to LTM transition, (k) Re-stimulation process and (l) STDP functionality

Key findings

- Device shows resistive switching response even at 10 mV.
- Fundamental memristor device characteristics are realized.
- Multiple conducting states are realized by varying the b_1 parameter
- Current tuneability response of the memristor framework under different amplitude (± 0.3 V, ± 0.5 V, ± 0.8 V, ± 1 V, and ± 1.5 V) and different pulse width (250 ms, 100 ms, 10 ms) has been demonstrated.
- Neuromorphic functionalities such as PPF, STM-to-LTM transition, restimulation process and STDP functionality are successfully realized

Aarti Dahiya, Sanjay Kumar, and Shalu Rani, "Exploring Multi-level Current and Impedance Spectroscopy Analysis of Atomic Layer Deposited $\text{HfO}_2/\text{Ta}_2\text{O}_5$ Memristive Devices", *IEEE Transactions on Electron Devices*, vol. 72, no. 12, pp. 110, 2025,

<https://doi.org/10.1109/TED.2025.3635115>

Exploring Multi-level Current and Impedance Spectroscopy Analysis of Atomic Layer Deposited $\text{HfO}_2/\text{Ta}_2\text{O}_5$ Memristive Devices

Existing challenges

Existing bilayer devices ($\text{Ta}_2\text{O}_5/\text{HfO}_2$) interface was not stable due to fabrication process and memristive devices showed resistive switching at significantly high voltage (< 10 V) with lower stability and consistency. Additionally, coefficient of variability (CV) in the device switching voltages is relatively high.

Methodology

- Herein, ~ 8 nm HfO_2 and ~ 2 nm Ta_2O_5 were deposited by atomic layer deposition (ALD).
- Top and bottom electrodes (TiN) were deposited using sputtering tool.

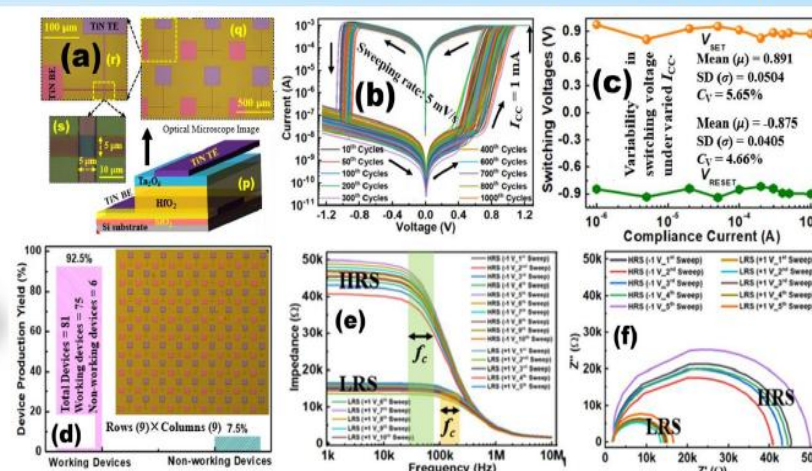


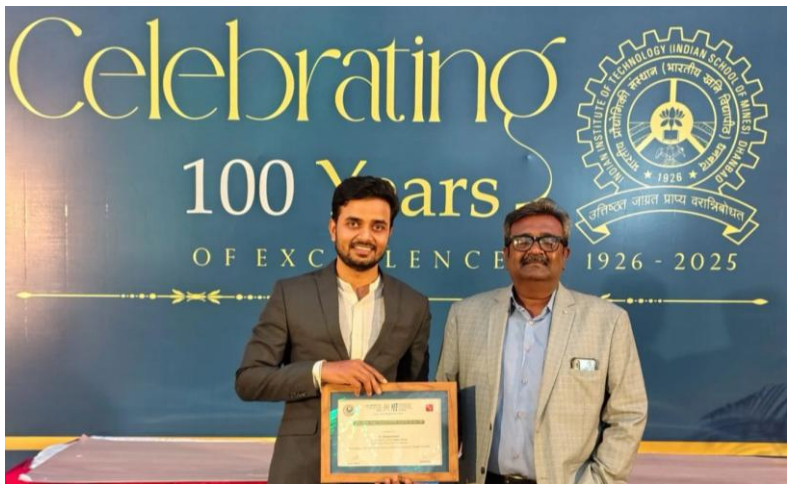
Fig 1. Structure of $\text{HfO}_2/\text{Ta}_2\text{O}_5$ memristive device along with Optical microscope images, (b) Bipolar resistive switching response over thousand cycles, (c) Variability in switching voltages under different I_{CC} , (d) Device production yield, (e) Impedance/frequency at ± 1 V sweep, and (f) Impedance spectroscopy (or Nyquist) plot under LRS and HRS states at ± 1 V with multiple sweeps.

Key findings

- Device Dimension = $25 \mu\text{m}^2$
- ON/OFF ratio = 10^4
- Cycle to cycle variation = ($V_{SET} = 2.24\%$ and $V_{RESET} = 1.14\%$)
- Device to Device variation = ($V_{SET} = 4.39\%$ and $V_{RESET} = 5.50\%$)
- The cut-off frequency (f_c) under LRS ($f_c \sim 100$ kHz) and HRS ($f_c \sim 30$ kHz) was different, which can be further beneficial to design the memristive device-based tunable filters

Subhanu Halder, Manoj Kumar, Yifan Sun & Sandeep Kumar, "Coarse-and-Learn: Efficient Online Node Labeling" Springer nature at ICONIP 2025. https://doi.org/10.1007/978-981-95-4384-7_32

Congratulations!



The Department of Electronics Engineering is delighted to share that its former Ph.D. student, Dr. Pankaj Kumar, under the supervision of Prof. Subindu Kumar, has received the Inder Mohan Thapar Research (IMTR) Award during the Centenary Celebration of IIT (ISM) Dhanbad.

Established in 2016 by the KCT Group Trust in partnership with the Indian Institute of Technology (ISM) Dhanbad, the Inder Mohan Thapar Research Awards honor outstanding achievements in academic research. These prestigious awards celebrate innovative work across diverse disciplines, inspiring both students and mentors to push the boundaries of knowledge. By recognizing academic excellence, the awards promote a collaborative culture of research and mentorship within IIT (ISM).



We extend our heartfelt congratulations to Mr. Bappa Ghosh, a valued member of our technical staff, on his commendable achievement of winning the Silver Medal in Football at the Inter IIT Staff Sports Meet 2025 at IIT Hyderabad. We wish him continued success in his sporting pursuits and professional responsibilities.



INTERACTION



The Chairman of the Board of Governors, accompanied by the Registrar, paid an official visit to the Department of Electronics to review its academic and infrastructural progress. During the visit, they toured the laboratories and other facilities, interacted with faculty members and discussed ongoing academic programs, research activities and future development plans.

The visit provided an opportunity to assess the department's achievements and challenges, while also emphasizing the importance of innovation, quality education and industry relevance. The Chairman and Registrar appreciated the efforts of the faculty and encouraged continued excellence in teaching, research and student development.





CENTENARY FOUNDATION WEEK



IIT (ISM) Dhanbad celebrated Day 5 of its Centenary Foundation Week on the theme "Tech Powered India: Computing & Communication". In the same, the Department of Electronics Engineering actively participated with their students and faculties, who showcased their cutting-edge research works and witnessed an overwhelming footfall of the visitors.



MEDIA CORNER

आईआईटी आईएसएम में शताब्दी स्थापना दिवस सप्ताह : प्रो. तपन के गांधी ने कहा...

असली एआई विकास तभी संभव है जब हम मानव मस्तिष्क को समझें

प्री-फाउंडेशन डे कल्चरल एक्सट्रावेगेंजा आज, पहली बार दिखेगा डोन शो

सिटीरिपोर्टर | धनबाद



आईआईटी आईएसएम में शताब्दी स्थापना दिवस सप्ताह का पांचवां दिन टेक पावर्ड इंडिया: कंप्यूटिंग एंड कम्यूनिकेशन थीम के साथ मनाया गया। पेनमैन ऑडिटोरियम में आईआईटी आईएसएम के 100 सालों की यात्रा पर बनी फिल्म लोगों को दिखाई गई। इसके बाद प्रो. तपन के. गांधी ने आर्टिफिशियल इंटेलिजेंस और इनोवेशन पर जानकारी दी। कहा कि असली एआई विकास तभी संभव है जब हम प्राकृतिक बुद्धिमत्ता यानी मानव मस्तिष्क को समझें। आज भी यह कई रहस्यों से भरा हुआ है। प्रो. आरके सिंह ने बताया कि भविष्य की

कम्यूनिकेशन टेक्नोलॉजी में फोटोनिक्स कितनी तेजी से आगे बढ़ रहा है। अभिषेक रंजन ने एसवीपी और सीईओ, बीएसईएस राजधानी पावर, ऑनलाइन जुड़े और पावर सेक्टर में आ रहे डिजिटल बदलावों पर प्रकाश डाला। पेनमैन क्वार्टरगल में एआई आधारित डिजिटल टेक्नोलॉजी का लाइव डेमो आयोजित किया। चिल्ड्रन एक्टिविटी सेंटर ने क्लास 5 तक के बच्चों के लिए गतिविधियां कराई गईं। सीनियर छात्रों के लिए स्कूलोमिन क्लब ने अलग-अलग कार्यक्रम आयोजित किए। सोमवार को

प्री-फाउंडेशन डे कल्चरल एक्सट्रावेगेंजा किया जाएगा। शाम में पद्म भूषण और ग्रैमी अवॉर्ड विजेता पंडित विश्व मोहन भट्ट वीणा वादन प्रस्तुत करेंगे। इसके बाद धनबाद में पहली बार डोन शो होगा। रात 7:30 बजे तक जिमखाना ग्राउंड में होगा। सैकड़ों रोशन डोन आसमान में समन्वित आकृतियों के साथ संस्थान की सौ साल की यात्रा और भविष्य की दिशा को एक अनोखे विजुअल शो के रूप में पेश करेंगे। यह डोन शो धनबाद के लिए एक नया और यादगार अनुभव साबित होने वाला है।

The fifth day of the Centenary Foundation Week at IIT ISM, Dhanbad was celebrated along with the Department of Electrical Engineering, Computer Science and Communication Engineering.

At the Penman Auditorium, a film depicting IIT (ISM)'s 100-year journey was screened for the audience. After this, Prof. Tapan K. Gandhi shared insights on Artificial Intelligence and Innovation. He stated that real AI development is possible only when we understand natural intelligence, that is, the human brain, which is still full of many mysteries.



OPPORTUNITY

In the Department of Electronics Engineering at IIT (ISM) Dhanbad, applications are being accepted for both full-time and part-time Ph.D. programs.

Application form, Guidelines, Terms & Conditions for full-time are available at IIT(ISM) Dhanbad website.

https://admissions.iitism.ac.in/phd/index.php/admission/add_phd/home

FACULTY PROFILE

Dr. Aman Sikri

Assistant Professor

Research Interest: Reconfigurable Intelligent Surfaces (RISs), Non Orthogonal Multiple Access (NOMA), Free Space Optical (FSO) Communications, Rate Splitting Multiple Access (RSMA).



Dr. Debjani Mitra

Professor

Research Interest: Wireless Communication- 5G technologies, Communication Networks, Machine Learning and Statistical Signal processing.

Dr. Govind Murmu

Assistant Professor

Research Interest: Signal Processing and Communication Algorithms, Adaptive Filters, Adaptive Beamforming for 4G/5G, Blind Source Separation (BSS) Algorithms, Adaptive Control.



Dr. Himanshu Bhusan Mishra

Associate Professor

Research Interest: Development of Physical Layer Signal Processing for 5G/6G Wireless Technologies (OFDM, Massive MIMO, OTFS, RIS, ISAC etc.), Implementation of Physical layer algorithms on Software Defined Radio (SDR) based point-to-point wireless setup.

Dr. Samrat Mukhopadhyay

Assistant Professor

Research Interest: Online Machine Learning, Compressed Sensing, Nonconvex and Stochastic Optimization, Sparse Adaptive Filtering.



Dr. Manoj Kumar

Assistant Professor

Research Interest: Graph machine learning, graph dimensionality reduction, optimization algorithms, federated learning, large language models (LLMs), and their real-world applications.

Dr. Ugrasen Singh

Assistant Professor

Research Interest: Design and analysis of wireless communication systems. I have been working on Space Modulation Techniques (SMTs), Reconfigurable Intelligent Surface (RIS), Non-Orthogonal Multiple Access (NOMA), Orthogonal Frequency Division Multiplexing (OFDM), Ultra-Reliable and Low-Latency Communication (URLLC), and Physical Layer Security.



Dr. Preety Priya

Assistant Professor

Research Interest: Integrated Communications and Sensing, High Mobility Communications, Leo Satellite Communications, OTFS, OFDM, Beamforming, MIMO, Sparse Signal Processing, Synchronization and Channel Estimation, Nonlinear Data Detection (Particle Filter).

Dr. Sushrut Das

Professor

Research Interest: Microwave Passive Networks, Antennas, Wireless Energy Transfer and Energy Harvesting Microwave Filters.



Dr. Santanu Dwari

Professor

Research Interest: RF & Microwave Engineering, Antenna.

Dr. Prashant Kumar Varshney

Assistant Professor

Research Interest: SIW Based Microwave Planar Sensors, Metamaterial Inspired Microwave Sensors for Various Applications.



Dr. Ravi Kumar Gangwar

Professor

Research Interest: Dielectric Resonator Antennas, MIMO Antennas, Bio-electromagnetics And Microwave Measurements.

Dr. Y. M. Asha Latha

Assistant Professor

Research Interest: RF Power Amplifier Design: Broadband, High Efficiency, Switched Mode PAs, Harmonic Manipulation, Harmonic Injection, Load Modulation, Doherty PA, Chip Design: GaN MMIC Based RF Power Amplifier Design.



Dr. Nirupama Mandal

Associate Professor

Research Interest: Transducer Design, Controller Design, Instrumentation System Design, Smart Sensing System and Smart Instrumentation.

Dr. Jaisingh Thangaraj

Associate Professor

Research Interest: Optical Networks, Wireless Sensor Networks, VANET, Software Defined Networks, Optical Instrumentation.**Dr. Jitendra Kumar**

Professor

Research Interest: Nano-optoelectronics, Nanoelectronics.**Dr. Mrinal Sen**

Associate Professor

Research Interest: Photonic Integrated Circuits, Embedded Systems.**Dr. Naresh Sharma**

Assistant Professor

Research Interest: Integrated Photonics, Programmable Photonics, Free Space Optics, Photonic Crystals Applications.**Dr. Swati Rajput**

Assistant Professor

Research Interest: Silicon Photonics for Next Generation Optical Communication, Nano photonics, Semiconductor Optoelectronics.**Dr. Subindu Kumar**

Professor

Research Interest: III-V Semiconductor Nano-structures, Nano-scaled MOS Devices and Circuits, On-Chip Interconnects.**Dr. Rahul Bhattacharya**

Assistant Professor

Research Interest: Modelling Of Analog and Mixed-signal Circuits, Fault Modeling and Testing of VLSI Circuits, FPGA-based Design.**Dr. Rajeev Kumar Ranjan**

Associate Professor

Research Interest: VLSI Design, Mem-element (Memristor, Memcapacitor, And Meminductor) Design.**Dr. Amitesh Kumar**

Associate Professor

Research Interest: Photonic Integrated Circuits, Fiber Optic Sensors, Microwave Photonics, and Radio-over Fiber Technologies for 5G and Beyond.**Dr. Devendra Chack**

Associate Professor

Research Interest: Photonic Integrated Circuits, Advance Optical Communications, Radio-over-Fiber System For 5G/6G.**Dr. Mukul Kumar Das**

Professor

Research Interest: Modeling and Design of Semiconductor Devices for VLSI and Optoelectronic Applications, Growth of Semiconductor Interface and Band-gap Engineered Thin Film Transistor and Solar Cell by using PVD Technique, Design and Development of Integrated Modules for Photonic QKD Network Development of Quantum Fiber Optic Network.**Dr. Sanjeev Kumar Raghuwanshi**

Professor

Research Interest: Numerical Method of Optical Waveguides, Optical Sensor, Microwave Photonics, Optical Fiber Communication.**Dr. Jeevesh Kumar**

Assistant Professor

Research Interest: 2D Materials, Emerging Electronic Devices, Atomistic Simulation, Device Fabrication, material & Device characterizations.**Dr. Kaushik Mazumdar**

Associate Professor

Research Interest: VLSI Design, Electronic Low Dimensional Systems, Analysis and Design of MOSFET & Nano-Devices.**Dr. Manodipan Sahoo**

Associate Professor

Research Interest: 2D Materials-based Devices and Circuits, Nanomaterials based Sensors, Heterogeneous 3D ICs, Neuromorphic Circuits.**Dr. Shalu Rani**

Assistant Professor

Research Interest: Energy Storage Devices for Wearable Electronics Including Advanced Flexible Supercapacitors/Micro-supercapacitors.



EDITOR'S NOTE

Greetings to all,

We are working diligently to improve the quality of our monthly newsletter for the electronics department. What are *your* opinions on *this* month's issue?

We would be grateful for your feedback. We are keen to learn what you enjoyed, what you would like to see more of, or any other recommendations you may have. Thank you for your attention!
Editorial Team

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Purity, patience, and perseverance are the three essentials to success and above all, love.

--Swami Vivekananda