SPARK

SPARK | e-NEWSLETTER

DEPARTMENT OF ELECTRONICS ENGINEERING

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

NOVEMBER 2025
XI EDITION

INSIDE THIS ISSUE

FROM THE HOD DESK

Dear Readers,

We are here to update you about the overall progress and a few milestones achieved by the Department of Electronics Engineering in November 2025.

The Department organized a five-day GIAN course titled "2D Materials for Emerging Electronics", coordinated by Prof. Jeevesh Kumar. After that, a couple of invited talks were delivered in the department by Dr. Somenath Roy, Senior Principal Scientist in the Functional Materials and Devices Division (FMDD) at CSIR-Central Glass & Ceramic Research Institute (CSIR-CGCRI), Kolkata, and Prof. Ariel Ismach from the Department of Materials Science and Engineering, Tel Aviv University.

In parallel, Prof. Himanshu Bhusan Mishra, Prof. Aman Sikri, Prof. Jitendra Kumar and Prof. Ravi Kumar Gangwar have recently contributed significantly to the research landscape through the publication of research articles in reputed international journals. As part of the Department's outreach initiatives, Prof. Swati Rajput participated in the 2025 IEEE Photonics Conference (IPC) in Singapore and the Symposium on Advanced Photonics (SAP 2025) held at IIT Indore. Additionally, a research team led by Prof. Sanjeev Kumar Raghuwanshi visited the SAIL Ramnagar Coal Mines, Asansol, to evaluate the health conditions of coal mine workers operating in challenging underground environments.

Meanwhile, the Department proudly observed the Constitution Day on November 26, 2025, commemorating the adoption of the Indian Constitution.

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. Finally, the internationally oriented and academically significant ELEXCOM 2025 Conference is scheduled for December 2025, and we anticipate active, enthusiastic, and broad-based participation in this major scholarly event.

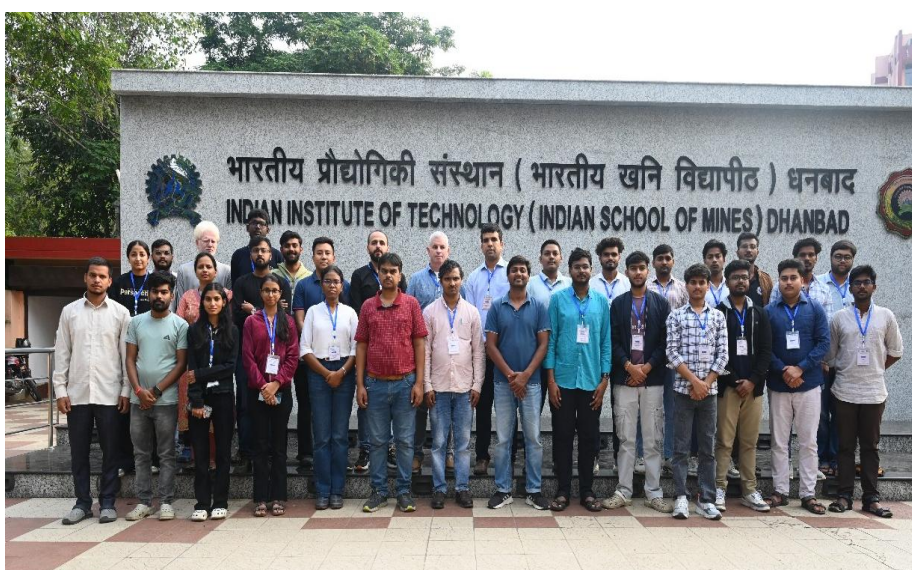
Please find the Newsletter for detailed updates and give your valuable feedback to fertilise us to be bigger and better.

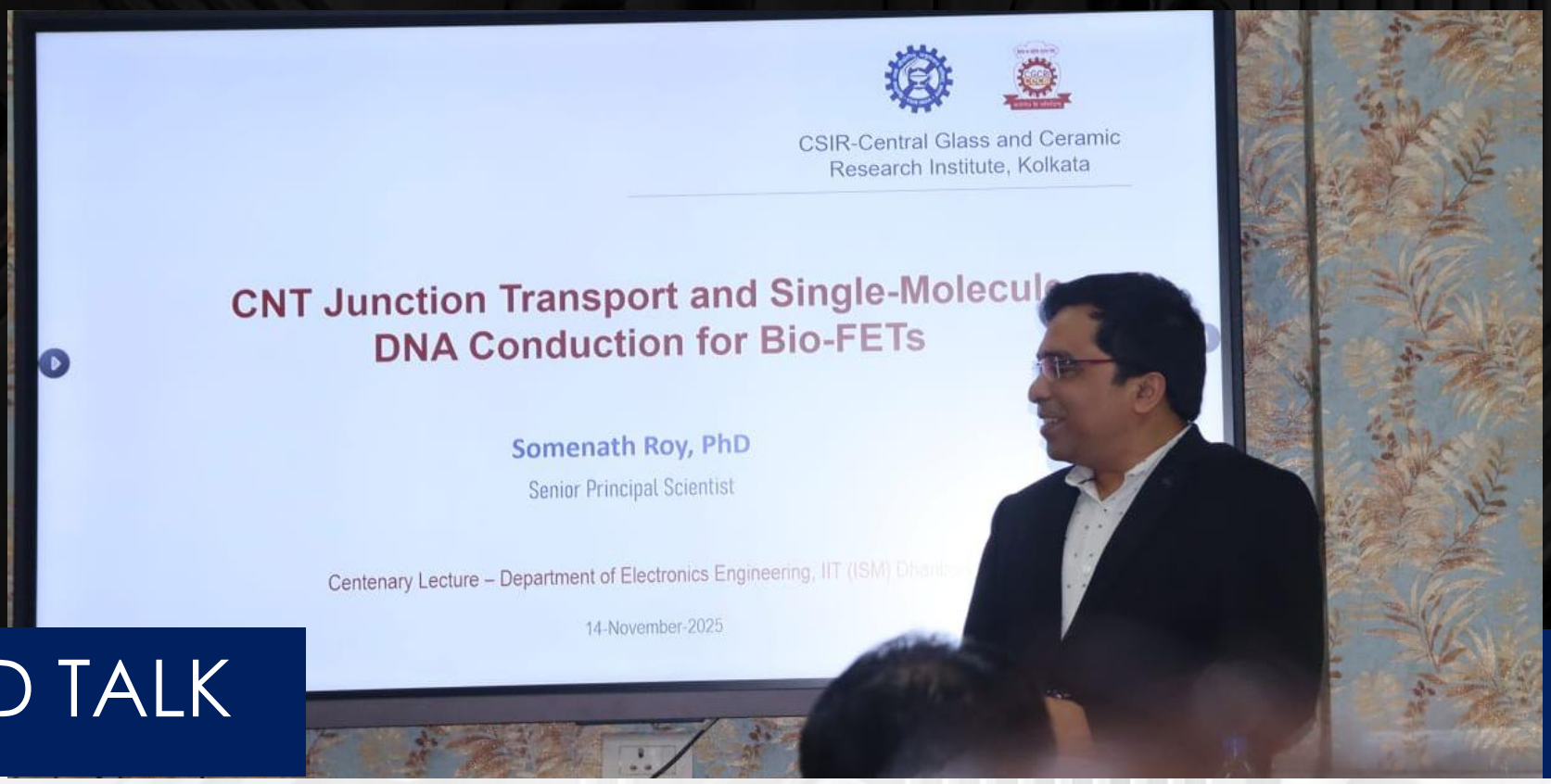
Wish you all the best!

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

GIAN COURSE

The Department of Electronics Engineering, IIT (ISM) Dhanbad, successfully organized a five-day GIAN course titled “2D Materials for Emerging Electronics” under the coordination of Prof. Jeevesh Kumar. The course brought together distinguished experts and participants to explore the latest advancements in the field of two-dimensional (2D) materials. Prof. Ariel Ismach from the Department of Materials Science and Engineering at Tel Aviv University, Israel, delivered enlightening lectures on the growth of large-area 2D materials using advanced CVD and MOCVD techniques. Prof. Jeevesh Kumar conducted comprehensive sessions on device fabrication, contact and dielectric engineering and electrical characterization methods. Overall, the program offered an enriching academic experience, igniting a fervent interest in the research of next-generation 2D electronic materials and devices and leaving participants inspired about the future of electronics.



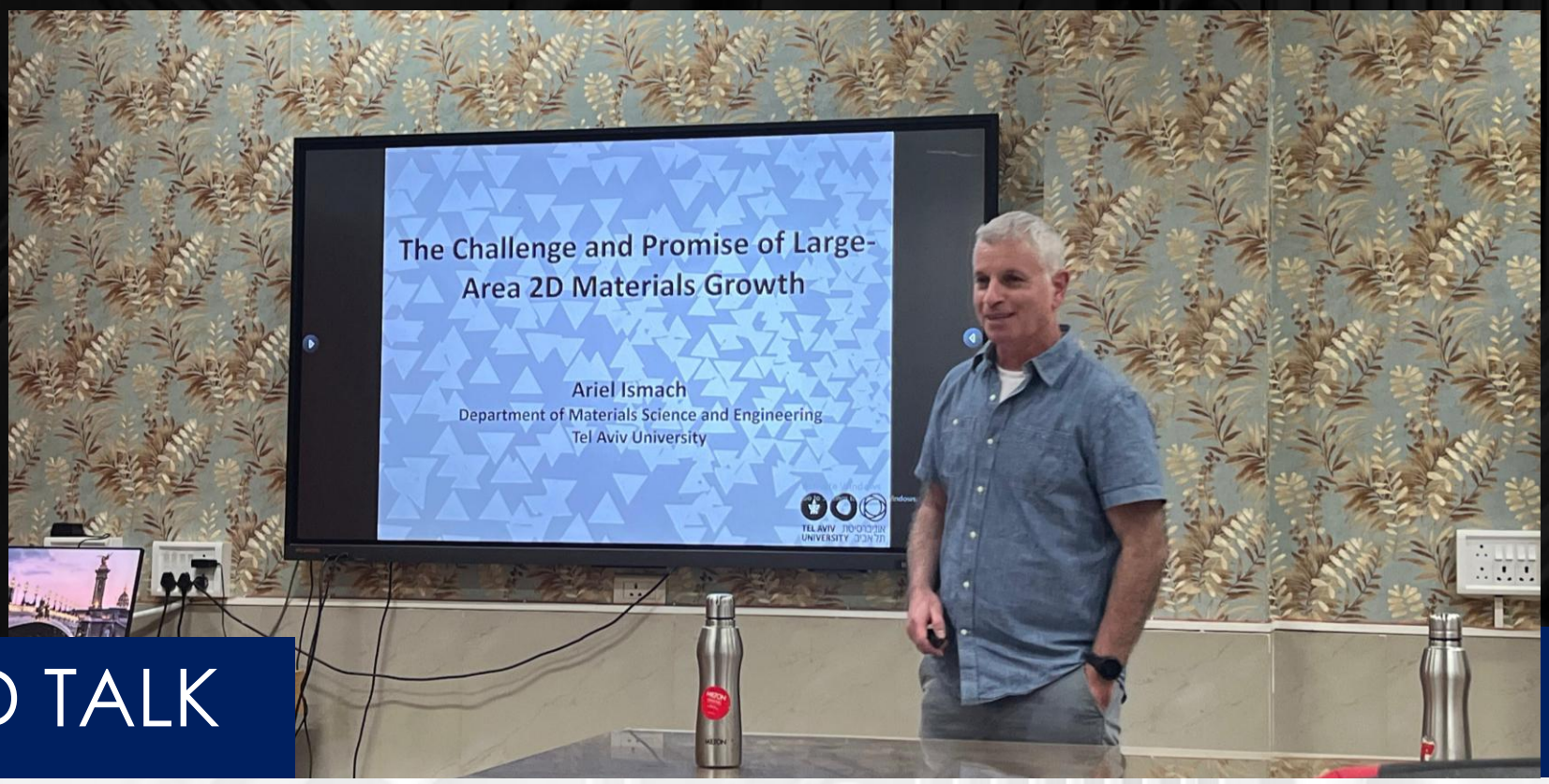


INVITED TALK

Centenary Lecture by Dr. Somenath Roy at Department of Electronics Engineering, IIT(ISM) Dhanbad

Dr. Somenath Roy, a Senior Principal Scientist in the Functional Materials and Devices Division (FMDD) at CSIR-Central Glass & Ceramic Research Institute (CSIR-CGCRI), Kolkata, delivered a Centenary Lecture on "CNT Junction Transport and Single-Molecule DNA Conduction for Bio-FETs" under the coordination of Prof. Manodipan Sahoo at Department of Electronics Engineering, IIT (ISM) Dhanbad.

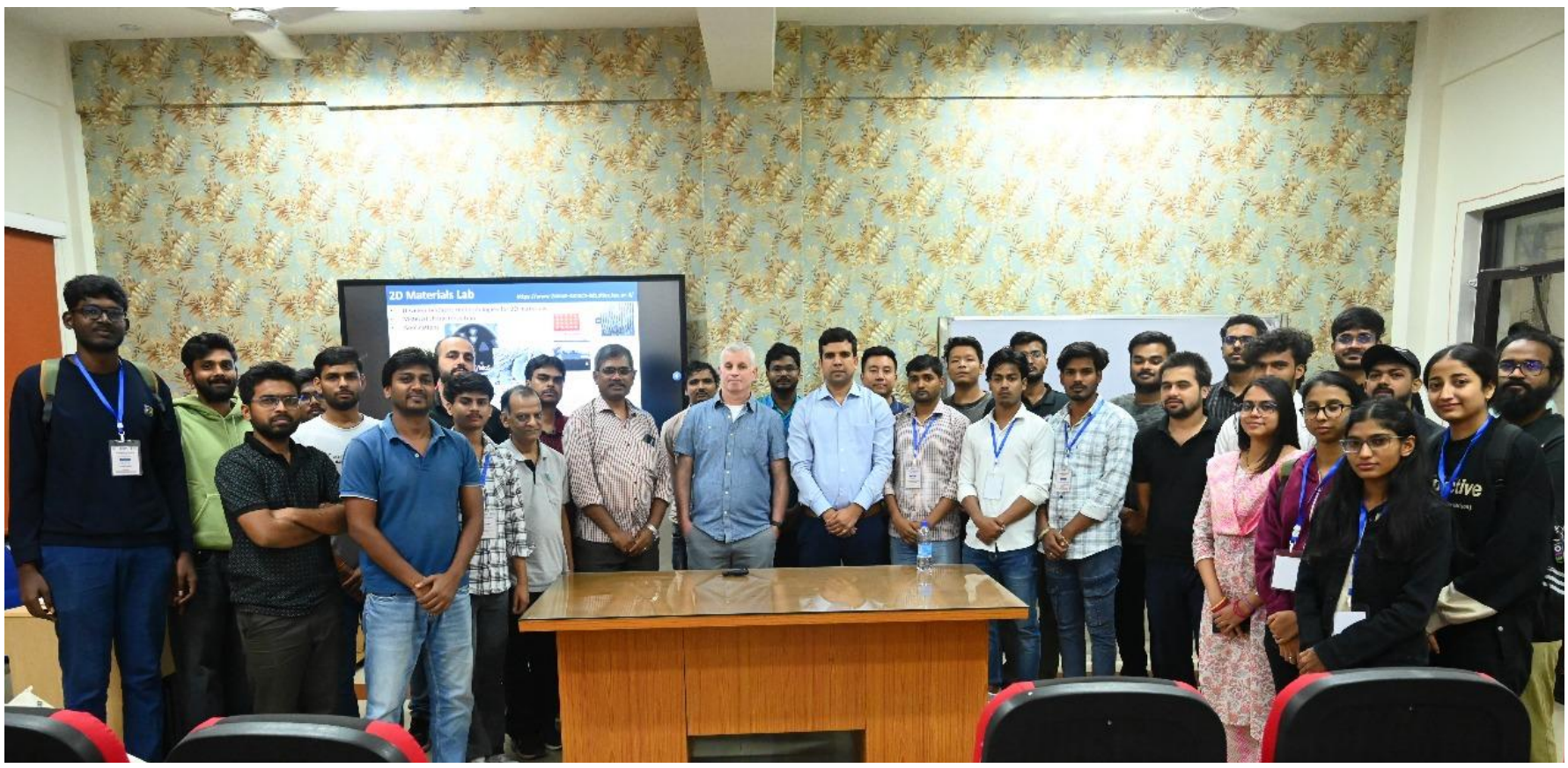
Dr. Roy is an accomplished scientist whose major research areas include electrochemical and optical biosensors, semiconductor nanostructures, and IoT-enabled point-of-care diagnostics. He has published over 70 research papers and holds multiple international patents, including US and PCT patents, for medical diagnostic devices. Before joining CSIR-CGCRI in 2012, he held research positions in Sweden, the USA, and Singapore. He received his Ph.D. from IIT Kharagpur in 2004 and was honored with the Platinum Jubilee Mid-Career Scientist Award in 2025 for his work in scalable point-of-care diagnostics.



INVITED TALK

Centenary Lecture by Prof. Ariel Ismach at Department of Electronics Engineering IIT(ISM) Dhanbad

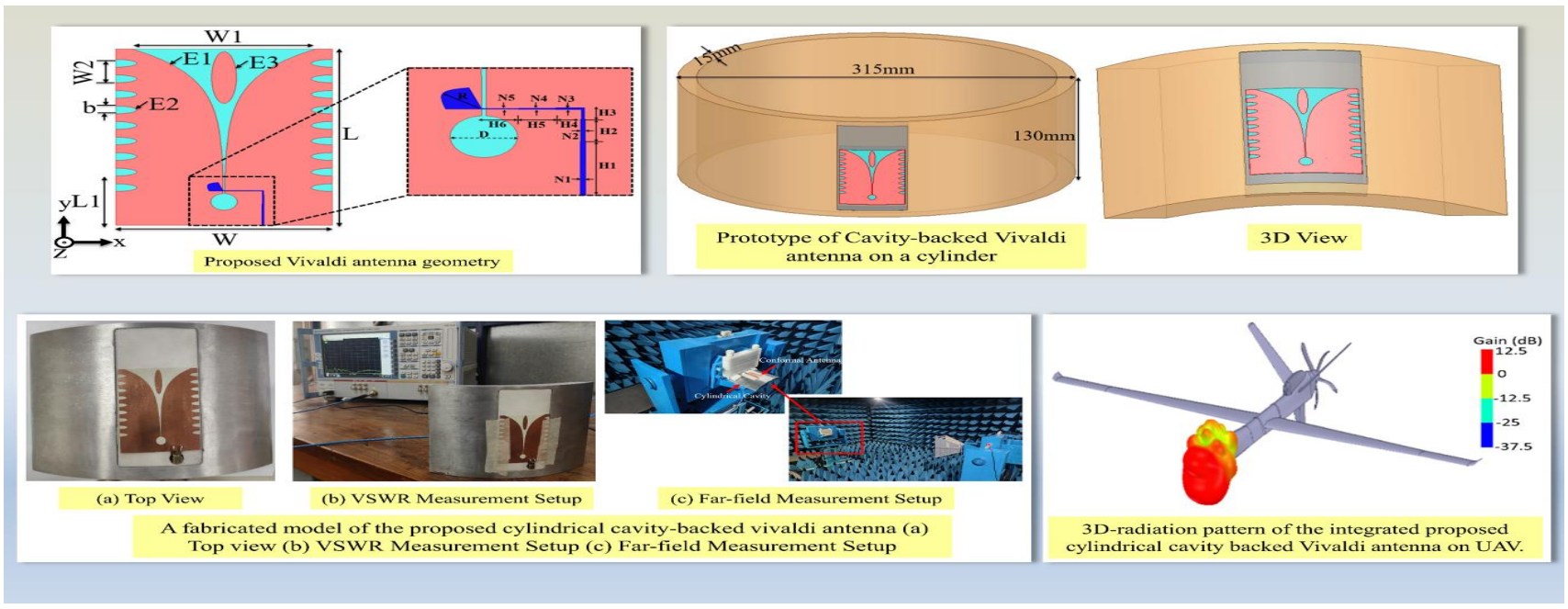
Prof. Ariel Ismach from the Department of Materials Science and Engineering at Tel Aviv University presented a Centenary Lecture at the Department of Electronics Engineering, IIT (ISM) Dhanbad, entitled “The Challenge and Promise of Large-Area 2D Materials Growth.” In his talk, Prof. Ismach provided an insightful overview of recent advancements in Chemical Vapor Deposition (CVD) techniques for synthesizing high-quality, large-area transition metal dichalcogenide (TMDC) films. He particularly emphasized the advantages of pulsed Metal-Organic CVD (MOCVD) methods, which enhance crystallinity and enable quasi–van der Waals epitaxial growth—thus paving the way for scalable integration of 2D materials into next-generation electronic and optoelectronic devices.



PUBLICATION

"Advanced Packaging of Conformal Wideband Antennas for UAVs with Optimized RCS Reduction" IEEE Transactions on Components, Packaging and Manufacturing Technology, November 2025. (https://doi.org/10.1109/TCPMT.2025.3639199) Authors: Manish Kumar Rauniyar, Kundan Kumar Suman, Ravi Kumar Gangwar

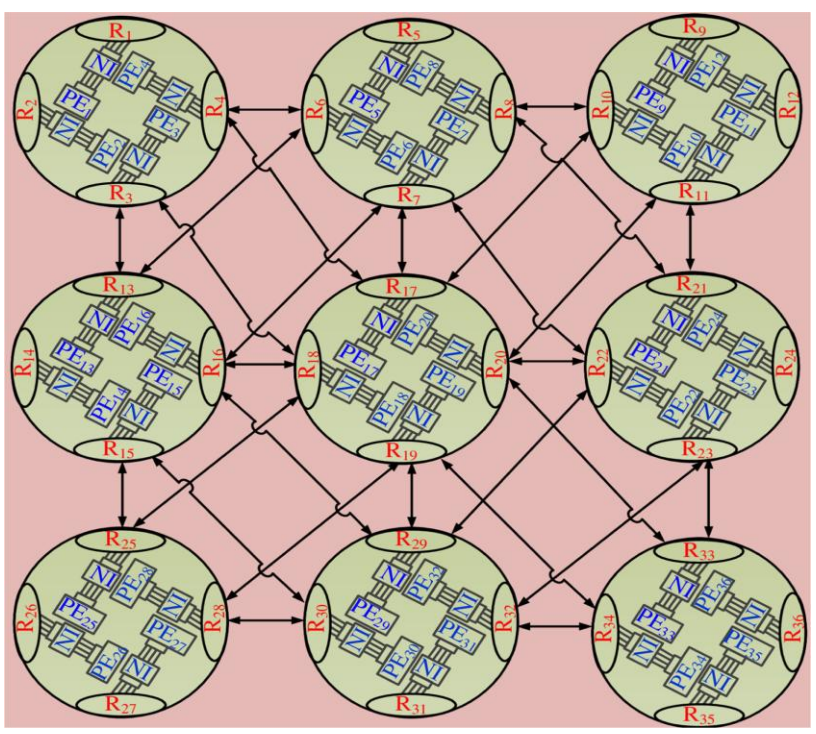
A cavity-embedded conformal Vivaldi antenna is presented for UAV platforms to achieve wideband 2–18 GHz operation, V2X connectivity, and reduced radar visibility. The antenna is integrated inside a curvature-matched cylindrical cavity with a Rohacell spacer, enabling true conformal behaviour with stable end-fire radiation. The design attains 5-12 dBi realized gain and reduces RCS to -18 dBsm. Full-wave simulations and anechoic measurements validate bandwidth, radiation stability, and stealth performance. UAV-mounted evaluations further demonstrate reliable communication coverage, making the design suitable for next- generation UAV sensing and mission systems.



"Adaptive congestion-aware high performance scalable 2-D and 3-D topologies for network-on-chip based interconnect for quantum computing", accepted in ScienceDirect.(https://doi.org/10.1016/j.vlsi.2025.102597)

Authors: Jayshree, Gopalakrishnan Seetharaman, Jitendra Kumar

This work presents challenges and solutions of global interconnect in Network-on-Chip (NoC) based System-on-Chips (SoCs) for congestion-free communication between different quantum accelerators in quantum computing systems. To address these problems, we have proposed two novel topologies in two-dimensional (2-D) and four topologies in three-dimensional (3-D). These topologies are based on two different architectural connection methods. The first two are the hybrid connection of the ring-of-mesh, with partial-diagonal-link (HMRPD) in 2-D and 3-D, and the other two are the hybrid connection of the ring-of-torus, with partial-diagonal-link (HTRPD) in 2-D and 3-D. Initially, the parametric analysis performed for both 2-D topologies and result shows that the interconnect has less diameter and average distance, which leads to reduce latency. It requires a small node degree, which makes it more accessible to design a network. It has a high bisection bandwidth, which helps in achieving low communication cost and high throughput. The scalability is higher than that of another existing interconnect. Further, we have examined the throughput, packet latency, and energy consumption of the interconnect for performance comparison of topologies under synthetic traffic patterns. We found that the proposed technique improves performance, optimizes communication cost, and energy consumption.



PUBLICATION

"Low Complexity High Speed Channel Estimation for OTFS on System on Chip," Accepted in IEEE Transactions on Circuits and Systems, November 2025. (https://doi.org/10.1109/TCSI.2025.3632906)

Authors: Sai Kumar Dora, IEEE, Sumit J. Darak, and Himanshu B. Mishra

This work presents a novel, low-complexity hardware implementation of the Two-Choice Hard Thresholding Pursuit (TCHTP) algorithm for sparse channel estimation (CE) in the delay-Doppler (DD) domain, specifically designed for Orthogonal Time Frequency Space (OTFS) modulation. Unlike prior compressed sensing methods, the proposed approach does not require prior knowledge of channel sparsity or statistics, making it highly suitable for real-world, high-mobility scenarios. It formulates the CE problem in a sparse framework and develop a hardware-friendly variant of TCHTP that jointly estimates channel coefficients and their DD positions. To reduce complexity in the coefficient estimation stage involving the inverse operation, it is explored and implemented three matrix decomposition strategies—singular value decomposition (SVD), QR decomposition, and a novel hybrid QR+SVD approach—on a system-on-chip platform using hardware-software co-design. The proposed hybrid architecture achieves up to 70.6% memory savings, 42.4% reduction in DSP usage, and a 132× speedup over the conventional design, while maintaining BER performance. Additionally, it achieves 10% lower power consumption and delivers an 84.2× increase in end-to-end physical layer throughput.

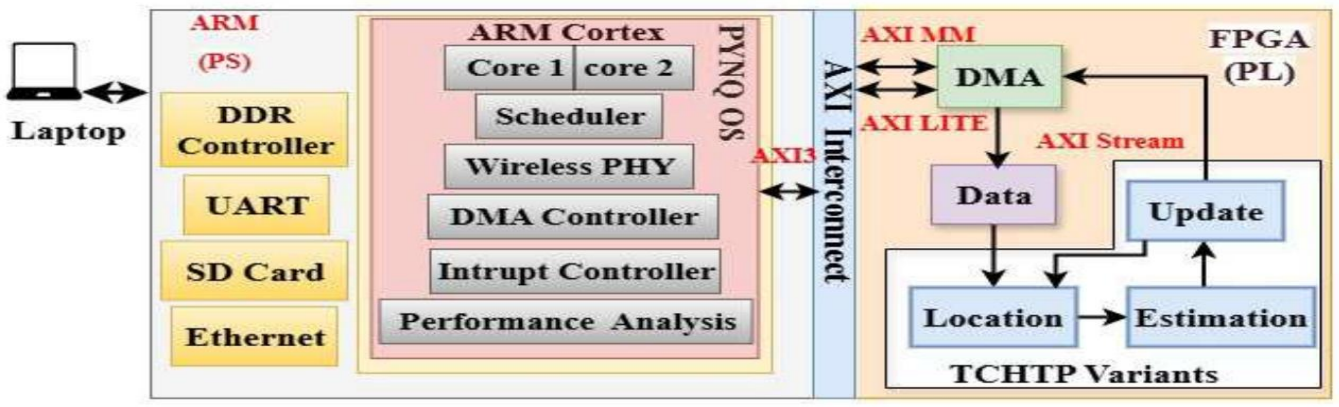


Fig. 1. HSCD of the TCHTP algorithm on Zynq soc.

"Energy Harvesting Aided PASTAR-RIS-Empowered NOMA System in the Presence of Impulsive Noise", accepted in IEEE Transaction on Vehicular Technology. (doi: 10.1109/TVT.2025.3638656)

Authors: A. Sikri, B. Selim, and G. Kaddoum

Reconfigurable intelligent surfaces are considered as a promising emerging technology for beyond-5th Generation /6th Generation wireless systems. Leveraging energy harvesting technology, this paper considers an energy constrained source node that harvests energy from a power source through passive reconfigurable intelligent surfaces. The harvested energy is then utilized to serve multiple downlink power domain non-orthogonal multiple access users with the aid of partitioned active simultaneous transmitting and reflecting reconfigurable intelligent surface. Partitioned active simultaneous transmitting and reflecting reconfigurable intelligent surface as well as power domain nonorthogonal multiple access users are assumed to be impaired by impulsive noise. Hardware impairments are also accounted for at the source node and the power domain non-orthogonal multiple access users.

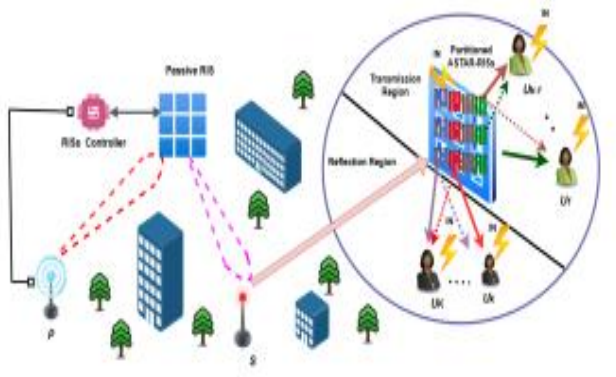
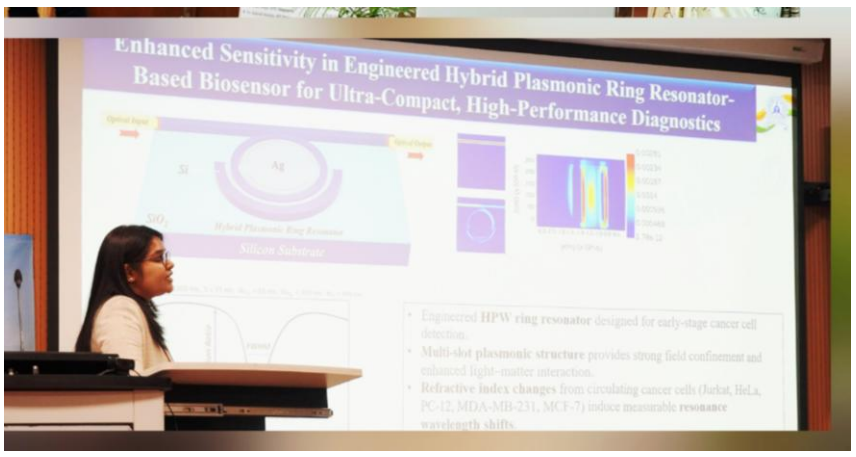


Fig. 1. System model showing wireless powered communication for partitioned ASTAR-RIS-empowered NOMA system in presence of impulsive noise

Prof. Swati Rajput attended the **2025 IEEE Photonics Conference (IPC)** in **Singapore**, where she presented her research work titled **“Efficient All-Optical Modulation via ENZ-State-Driven ITO Ring Resonator with Layered Bus–Ring Integration.”** The conference provided an excellent platform to engage with the global photonics community, exchange ideas and discuss cutting-edge advancements in photonic technologies.

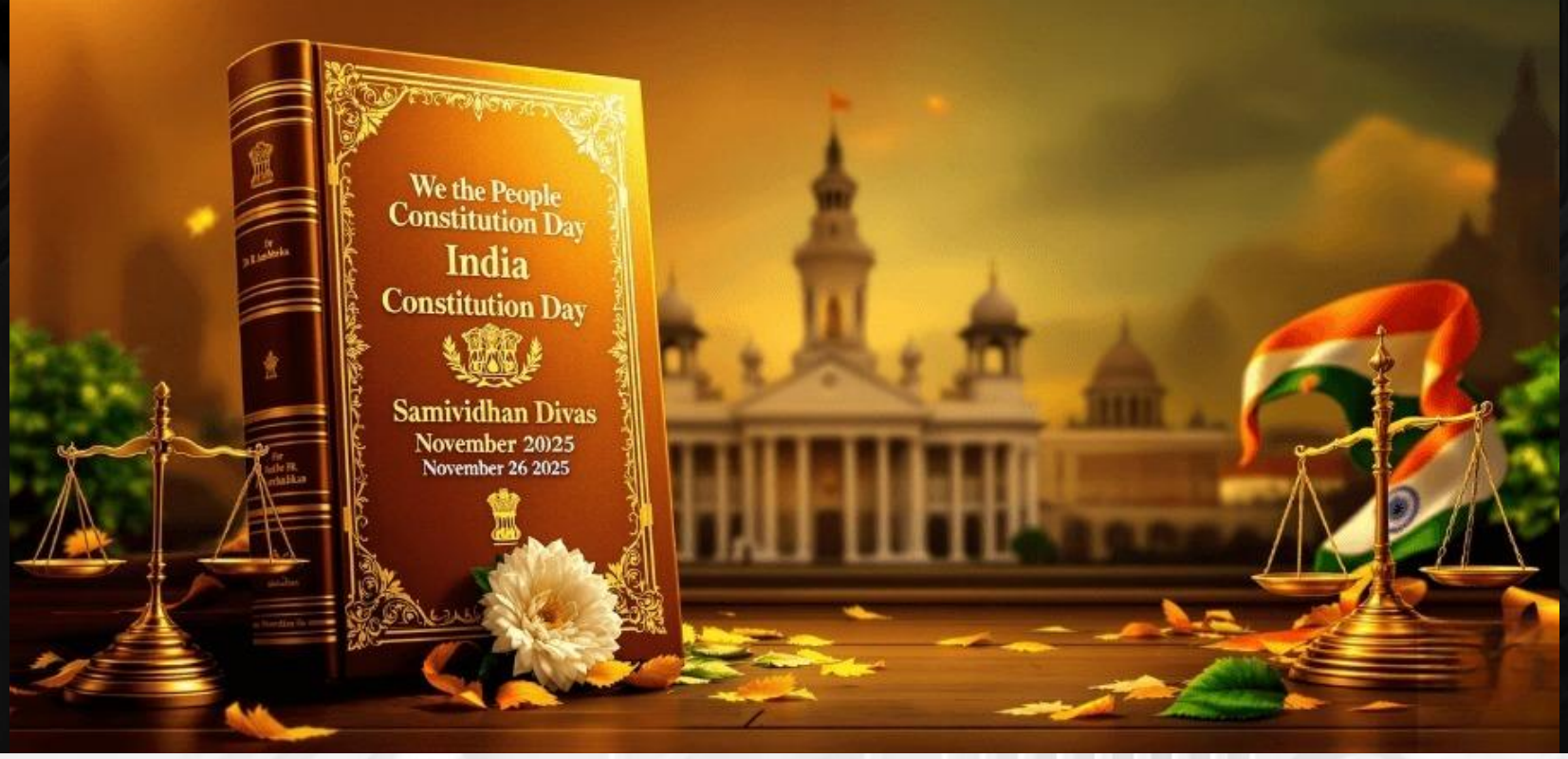


Prof. Swati Rajput delivered an invited talk titled **“Heterogeneous Silicon Photonics for Next-Generation Optical Communication”** at the **Symposium on Advanced Photonics (SAP 2025)** held at **IIT Indore**. In her presentation, she highlighted recent advances and emerging trends in heterogeneous silicon photonics, emphasizing its critical role in enabling high-speed, energy-efficient, and scalable optical communication systems for next-generation technologies.

The talk sparked insightful discussions and meaningful interactions with faculty members, researchers, and students, fostering the exchange of ideas on both fundamental challenges and future research directions in the field. Engaging with the vibrant academic community at IIT Indore and witnessing the enthusiasm of young researchers toward this rapidly evolving area made the experience particularly enriching and rewarding.

Wearable Health Monitoring System Deployment at SAIL Ramnagar Coal Mines, Asansol

As part of the department's outreach initiative towards improving workplace health and safety, a research team led by **Prof. Sanjeev Kumar Raghuwanshi** visited the **SAIL Ramnagar Coal Mines, Asansol** to assess the health conditions of coal mine workers operating in rigorous underground environments. During the visit, the team successfully demonstrated a **wearable biomedical monitoring system** developed in our laboratory, capable of measuring vital physiological signals such as ECG, EEG, and EMG. The system is designed as a lightweight, low-power, battery-operated **lab-on-chip module** integrated within a smart wearable jacket. It continuously acquires the workers' health parameters and transmits them **wirelessly** to a custom-developed mobile application for real-time visualization and analysis. This on-field deployment showcased the practical effectiveness of the technology in providing continuous health surveillance without hindering workers' regular movements. The initiative reflects the department's strong commitment to translating cutting-edge electronics research into real-world solutions that contribute to industrial safety, public health, and national societal development.



The Department of Electronics Engineering at IIT (ISM) Dhanbad proudly observed Constitution Day on November 26, 2025, commemorating the adoption of the Indian Constitution. The event commenced with a concise overview of the historical importance of Constitution Day, succeeded by the recitation of the Preamble, reinforcing our shared dedication to justice, liberty, equality, and fraternity. Faculty members highlighted the importance of engineers in maintaining ethical standards and making significant contributions to national progress.

HONORING THE ESSENCE OF JUSTICE, LIBERTY, EQUALITY, & FRATERNITY

UPCOMING EVENT

ELEXCOM'25

Tracks of Conference

Electric and Autonomous Vehicles
Charging Software & AI/ML Support Charging Infrastructure, Energy Storage Technologies, Power train and drives for electric transportation, EV/AVs Industry – Regulations, Economics and Standards, Renewable Integration, Cyber resiliency in EV/AVs, Sustainable Development and Transformation in EV/AVs, Grid Integration and allied areas, Battery Management and Swapping Systems, Intelligently controlled EV/AVs, Power Systems operation, control and allied areas, Power Electronics applications and allied areas, System Modelling and Control applications

Communication Beyond 5G/6G
Network architectures and communication protocols, Massive MIMO/Millimeter wave communications, 3D Aerial BS placement and online/offline UAV trajectory optimization,Theoretical frameworks for the analysis of wireless communications, System-level simulation studies of wireless communications, Satellite & Space Communications, Smart Grid Communications, Integrated Sensing and Communication, Reconfigurable Intelligent Surfaces, Green Communication Systems & Networks, AI/ML for communications, Hardware architecture of communication systems, Signal processing and communication allied areas, Digital Mining, Underground Mine Communication, Drone Based Applications in Agriculture, Surveillance, project monitoring etc., AI/ML applications, Microwaves for Target Detection & Identification, Information & Communication Technology, Drone and allied areas, Antenna and Wave Propagation, EMC/EMI and its applications, Phase Array Antenna Systems, Over the air RCS measurements

Quantum and Photonics
Quantum Communications & Computing, Quantum Information and processing, Quantum Photonics, Quantum Devices, Topological Photonics, Silicon Photonics, Optical communication and networks, Fiber & guided wave photonics, Microwave & Terahertz Photonics, Photonic Materials & Devices, Lasers & Nonlinear Optics, Lidar and its applications, AL & ML in Photonics, Optical Microscopy and Imaging, Free Space Optics

VLSI Technology and Circuits
CMOS Analog, Mixed-Signal and digital circuits, Reconfigurable logic/computation, Device - Circuit Interactions, CAD for VLSI, MEMS / NEMS, Spintronics, Testing and Verification, Biomedical Devices, Circuits, and Systems, Computing / Processing in Memory, Data Converters, Device Modeling, Fabrication, Characterization and Reliability, Digital Circuits, Hardware Security, Signal Integrity, IOs, Power Management Devices and Circuits, Processes and Materials for CMOS Scaling and New Devices, Processors and NoC/SoC, Wireless and RF Devices Circuits and Systems, Neuromorphic Computing, AI/ML on Chip, RF Integrated Circuits, High Power VLSI

Intelligent Computing and Automation
Artificial Intelligence (AI) in advanced networking, Big Data Cloud/Fog/Edge Computing, IoT, Industry 5.0 and beyond, AI/Machine Learning (ML) in computer vision applications, Safety, security, cyberattacks and hijacking, AI/ML in Autonomous Vehicles (AVs), Effect of AVs on public health, High performance computing, Evolutionary Computing, Intelligent algorithms for automation, Connected autonomous vehicles and internet of vehicles, Reinforcement Learning (RL) and Deep Reinforcement Learning (DRL), Intelligent and Autonomous vehicles, Intelligent Transportation System, AV/UAV in Agriculture, Transportation and Smart city applications, V2V and V2X communication networks, Green Computing and communications

Indian Institute of Technology (ISM) Dhanbad
Centenary Celebrations

Chief Patron
Prof. Prem Vrat
(Chariman, BOG, IIT (ISM) Dhanbad)

Patron
Prof. Sukumar Mishra
(Director, IIT (ISM) Dhanbad)

Co-Patron
Prof. Dharmendra Singh
(Director, IIIT Vadodara)

Advisory Committee
- Prof. Georges Kaddoum, cole de technologie supérieure Montréal, QC, Canada
- Prof. Lawrence R Chen, McGill University, Montreal Canada
- Prof. Suresh Subramaniam, George Washington University, Washington, DC
- Prof. A. Chockalingam, IISC Bangalore
- Prof. Vikram M Gadre, IIT Bombay
- Prof. B K Das, IIT Madras
- Prof. Deepa Venkitesh, IIT Madras
- Dr. Uma Maheswaran, CRL, Bharat Electronics, Gaziabad
- Prof. Mrityunjoy Chakraborty, IIT KGP
- Prof. Preetam Kumar, IIT Patna
- Prof. Samaresh Das, IIT Delhi
- Prof. Sameer S M, NIT Calicut
- Prof. Nirnimesh Ghose, University of Nebraska-Lincoln, USA
- Prof. Tapan Kumar Gandhi, IIT Delhi
- Dr. Sunil Sharma, SSPL DRDO Delhi
- Prof. Debatosh Guha, University of Calcutta

Conference Chairs

General Chair
- Prof. Ravi Kumar Gangwar, IIT (ISM) Dhanbad

Organizing Chairs
- Prof. Himanshu Bhusan Mishra, IIT (ISM)
- Prof. Devendra Chack, IIT (ISM)
- Prof. Jaisingh T, IIT (ISM)

Steering Committee
- Prof. Dharmendra Singh, IIT Roorkee
- Prof. Ekant Sharma, IIT Roorkee
- Prof. Deep Kiran, IIT Roorkee

TPC Chairs
- Prof. Debjani Mitra, IIT (ISM)
- Prof. Amalendu Patnaik, IIT Roorkee
- Prof. Pandiyan Krishnamoorthy, Covesion Ltd., UK

Financial Chairs
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- Prof. Amitesh Kumar, IIT (ISM)

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- Prof. Jitendra Kumar, IIT (ISM)
- Prof. Manodipan Sahoo, IIT (ISM)
- Prof. Dharavath Ramesh, IIT (ISM)
- Prof. Abhay Kumar Sah, IIT Roorkee
- Prof. Kishor B Nandapurkar, IIT Roorkee

Website Chairs
- Prof. Rahul Bhattacharya, IIT (ISM)
- Prof. Neetesh Kumar, IIT Rookee

Tutorial chairs
- Prof. Dushyant Sharma, IIT (ISM)
- Prof. Om Jee Pandey, IIT (BHU)
- Prof. Prem Singh, IIIT Bangalore

Publication and Editorial Chairs
- Prof. Samrat Mukhopadhyay, IIT (ISM)
- Prof. Gauri Shankar, IIT (ISM)
- Prof. Anshul Jaiswal, IIT Roorkee

Session Chairs
- Prof. Mukul Kumar Das, IIT (ISM)
- Prof. Santanu Dwari, IIT (ISM)
- Prof. Sanjeev K Raghuwanshi, IIT (ISM)
- Prof. Debabrata Sikdar, IIT Guwahati

Registration Chairs
- Prof. Rajeev K Ranjan, IIT (ISM)
- Prof. Prashant Kumar Varshney, IIT (ISM)
- Prof. Swati Rajput, IIT (ISM)

Hospitality Chairs
- Prof. Nirupama Mandal, IIT (ISM)
- Prof. Y.M. Asha Latha, IIT (ISM)
- Prof. Kaushik Majumdar, IIT(ISM)
- Prof. Naresh Sharma, IIT (ISM)

Publicity Chairs
- Prof. Jawar Singh, IIT Patna
- Prof. Sandeep Kumar, IIT Delhi
- Prof. Jeevesh Kumar, IIT (ISM) Dhanbad

Contact

Prof. Himanshu Bhushan Mishra
himanshu@iitism.ac.in

Prof. Devendra Chack
devendra@iitism.ac.in

Prof. Jaisingh T
jaisingh@iitism.ac.in

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2nd International Conference on Electrical, Electronics, Communication and Computers

Organized By
Department of Electronics Engineering
Indian Institute of Technology (ISM) Dhanbad
(20th - 22nd December, 2025)

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elexcom@iitism.ac.in

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

Communication and Signal Processing Engineering

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).

RF and Microwave Engineering

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.

Instrumentation & Control

Optical communication and Integrated Photonics

Dr. Jaisingh Thangaraj
Associate Professor
Research Interest: Optical Networks, Wireless Sensor Networks, VANET, Software Defined Networks, Optical Instrumentation.

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. Jitendra Kumar
Professor
Research Interest:
Nano-optoelectronics, Nanoelectronics.

Dr. Devendra Chack
Associate Professor
Research Interest: Photonic Integrated Circuits, Advance Optical Communications, Radio-over-Fiber System For 5G/6G.

Dr. Mrinal Sen
Associate Professor
Research Interest: Photonic Integrated Circuits, Embedded Systems.

Dr. Mukul Kumar Das
Professor
Research Interest: Modeling and Design of Semiconductor Devices for VLSI and Opto-electronic 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. Naresh Sharma
Assistant Professor
Research Interest: Integrated Photonics, Programmable Photonics, Free Space Optics, Photonic Crystals Applications.

Dr. Sanjeev Kumar Raghuwanshi
Professor
Research Interest: Numerical Method of Optical Waveguides, Optical Sensor, Microwave Photonics, Optical Fiber Communication.

Dr. Swati Rajput
Assistant Professor
Research Interest: Silicon Photonics for Next Generation Optical Communication, Nano photonics, Semiconductor Optoelectronics.

Dr. Jeevesh Kumar
Assistant Professor
Research Interest: 2D Materials, Emerging Electronic Devices, Atomistic Simulation, Device Fabrication, material & Device characterizations.

Dr. Subindu Kumar
Professor
Research Interest: III-V Semiconductor Nano-structures, Nano-scaled MOS Devices and Circuits, On-Chip Interconnects.

Dr. Kaushik Mazumdar
Associate Professor
Research Interest: VLSI Design, Electronic Low Dimensional Systems, Analysis and Design of MOSFET & Nano-Devices.

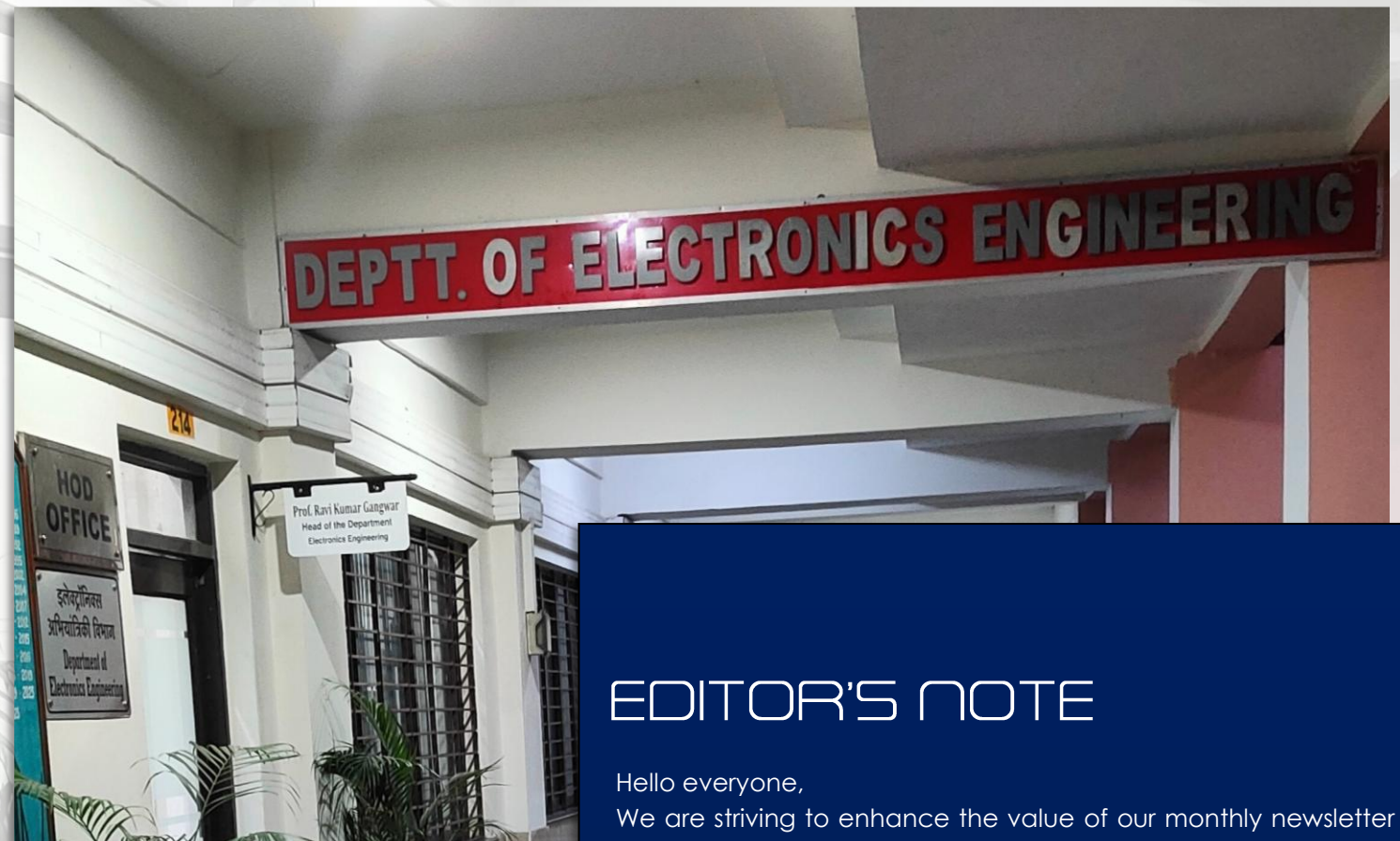
Dr. Rahul Bhattacharya
Assistant Professor
Research Interest: Modelling Of Analog and Mixed-signal Circuits, Fault Modeling and Testing of VLSI Circuits, FPGA-based Design.

Dr. Manodipan Sahoo
Associate Professor
Research Interest: 2D Materials-based Devices and Circuits, Nanomaterials based Sensors, Heterogeneous 3D ICs, Neuromorphic Circuits.

Dr. Rajeev Kumar Ranjan
Associate Professor
Research Interest: VLSI Design, Mem-element (Memristor, Memcapacitor, And Meminductor) Design.

Dr. Shalu Rani
Assistant Professor
Research Interest: Energy Storage Devices for Wearable Electronics Including Advanced Flexible Supercapacitors/Micro-supercapacitors.

Nanoelectronics and VLSI



EDITOR'S NOTE

Hello everyone,
We are striving to enhance the value of our monthly newsletter for the electronics department. What are your thoughts on this month's edition? We would appreciate your feedback. We are eager to know what you liked, what you would like to see more of, or any other suggestions you might have. Thank you for your time!

Editorial Team

Dr. Jeevesh Kumar (jeevesh@iitism.ac.in)

Mr. Bappa Ghosh (bappaghosh92@iitism.ac.in)

Mr. Vaibhav (vaibhav@iitism.ac.in)

Contact Us @

LinkedIn YOUTUBE Website

DEPARTMENT OF ELECTRONICS ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY
(INDIAN SCHOOL OF MINES) DHANBAD,
JHARKHAND, INDIA, 826004

PHONE: +91-326-223 5274

Let us not pray to be sheltered from dangers,
but to be fearless when facing them

--Rabindranath Tagore