

Legacy that Inspires the Future

भारतीय प्रौद्योगिकी संस्थान
भारतीय खनि विद्यापीठ
धनबाद



**IIT
ISM** INDIAN INSTITUTE
OF TECHNOLOGY
INDIAN SCHOOL OF MINES
DHANBAD

DEPARTMENT OF ELECTRONICS ENGINEERING

INDIAN INSTITUTE OF TECHNOLOGY

(INDIAN SCHOOL OF MINES), DHANBAD

SPARK

e-NEWSLETTER

AUGUST 2026

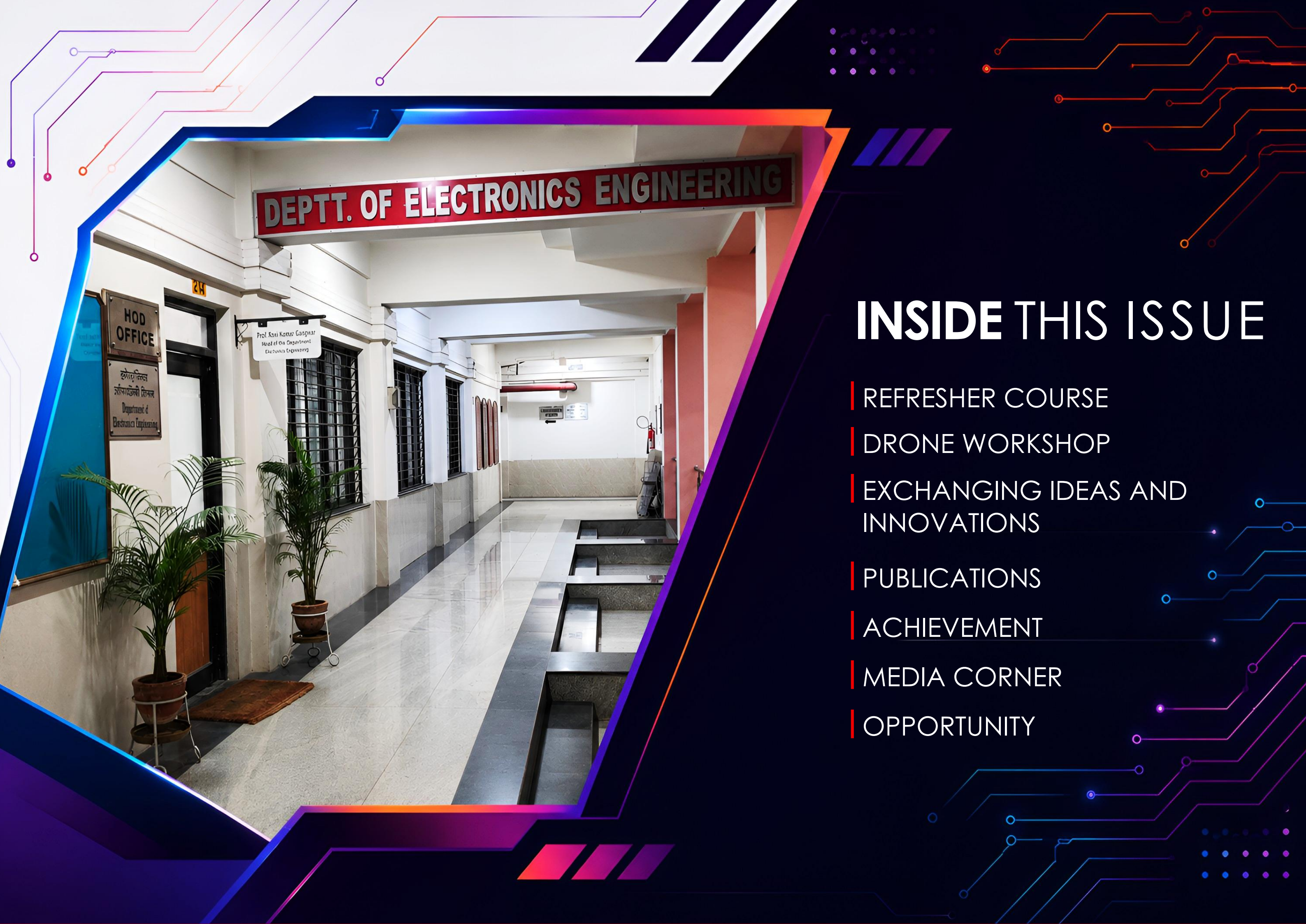
VOLUME-2, ISSUE-8



STAY CONNECTED
<https://www.iitism.ac.in/electronics-engineering>



LinkedIn



DEPTT. OF ELECTRONICS ENGINEERING

INSIDE THIS ISSUE

- | REFRESHER COURSE
- | DRONE WORKSHOP
- | EXCHANGING IDEAS AND INNOVATIONS
- | PUBLICATIONS
- | ACHIEVEMENT
- | MEDIA CORNER
- | OPPORTUNITY

HOD'S ADDRESS



Dear Readers,

It gives me immense pleasure to welcome you to this edition of our department's newsletter, a vibrant record of our collective achievements, technological advancements, and commitment to academic excellence. Our department continues to serve as a hub for cutting-edge research, professional development, and practical innovation.

A significant milestone in our academic initiatives was the successful organization of the two-week hybrid refresher course titled "Device-Circuit Co-Design." I extend my heartiest congratulations to Prof. Manodipan Sahoo (Course Coordinator) and Prof. Rajeev Kumar Ranjan (Course Co-coordinator) for organizing a high-impact program that bridged the crucial gap between semiconductor physics and circuit design methodologies for modern electronics.

Emphasizing experiential learning and emerging technologies, the department also hosted a hands-on One-Day Drone Workshop, providing participants with vital practical exposure to autonomous aerial systems.

Furthering our focus on next-generation communication networks, Prof. Y. M. Asha Latha delivered an inspiring expert session on "RF Power Amplifiers for 5G/6G Technologies," shedding light on the critical hardware challenges and opportunities shaping modern telecommunications.

I would like to highlight the outstanding work of Prof. Manodipan Sahoo, Prof. Aman Sikri, as well as their respective research scholars, for their recent valuable publications in prestigious journals that have significantly advanced knowledge in their fields.

On the scholarly front, we have reason to celebrate a prestigious individual honour. I am proud to share that Prof. Shalu Rani has joined the Editorial Board of the highly renowned Chemical Engineering Journal. This appointment reflects the high quality and international standing of our faculty's research contributions.

I commend all coordinators and resource persons for their dedicated efforts and encourage our students and scholars to keep exploring new horizons and striving for excellence.

Wish you all the best!

Subindu Kumar

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



Hybrid Refresher Course

DEVICE-CIRCUIT CO-DESIGN

From Emerging Materials to Intelligent Systems

As part of its centenary celebrations (1926–2026), Indian Institute of Technology (Indian School of Mines) Dhanbad is organizing a flagship two-week hybrid refresher course titled "DEVICE-CIRCUIT CO-DESIGN: From Emerging Materials to Intelligent Systems" from August 10 to 23, 2026.

Hosted by the Department of Electronics Engineering under the UGC-supported Malaviya Mission Teacher Training Programme (MMTTC), this initiative addresses the critical demand for low-power, trustworthy, and energy-efficient electronic systems tailored for the post-CMOS era.

The program brings together an elite panel of 28 researchers and domain experts from premier universities, national research laboratories, space agencies, and global semiconductor companies:

Distinguished Resource Persons & Panellists

IISc & Premier IITs	Invited Experts & Affiliations
	Prof. Anand Bulusu (IIT Roorkee), Prof. Gorachand Dutta (IIT Kharagpur), Prof. Sudeb Dasgupta (IIT Roorkee), Prof. Satyabrata Jit (IIT BHU), Prof. Rohit Sharma (IIT Ropar), Prof. Saurabh Pandey (IIT Patna), Prof. Mukul Kumar Das (IIT ISM Dhanbad), Prof. Swati Rajput (IIT ISM Dhanbad), Prof. Subindu Kumar (IIT ISM Dhanbad), Prof. Rajalingam Thangavel (IIT ISM Dhanbad), Prof. Subham Sahay (IIT Kanpur), Prof. Tarun Agarwal (IIT Gandhinagar), Prof. Tapan K. Gandhi (IIT Delhi), Prof. Aniket Singha (IIT Kharagpur), Prof. Satyam Suwas (IISc Bangalore), Prof. Krishanu Biswas (IIT Kanpur), Prof. Mukesh Kumar (IIT Indore), Prof. Maryam S. Baghini (IIT Bombay)
National Labs & Space Agencies	Dr. H. S. Jatana (Former Scientist G & Group Head, SCL ISRO), Mr. Anurag Tyagi (Scientist/Engineer SG, URSC ISRO), Dr. Somenath Roy (CSIR-CGCRI Kolkata), Dr. Debalaya Sarker (Scientist E, DAE Indore)
Industry & Specialized Academia	Dr. Parthasarathi Gupta (GlobalFoundries), Prof. Kumar Prasannajit Pradhan (IIITDM Kancheepuram), Prof. Manas Kumar Bera (NIT Rourkela), Prof. Sanatan Chattopadhyay (Univ. of Calcutta), Prof. Gurudas Mandal (Kazi Nazrul Univ.), Prof. Bhargab B. Bhattacharya (IEST Shibpur)

The future of electronics requires bridging fundamental science with system-level architectures. This course equips participants with an end-to-end framework across four core stages:

- Materials:** Focuses on 2D materials, nanoscale carbon, functional nanomaterials, and electronic materials.
- Devices:** Covers nanoscale device physics, emerging transistors, and compact modeling.
- Circuits:** Explores device-aware analog/digital design, variability, and electro-thermal reliability issues.
- Systems:** Targets low-power intelligent systems, IoT-oriented electronics, and cross-layer optimization.

Program Structure & Learning Highlights

Designed for faculty, researchers, and advanced practitioners, the curriculum integrates theoretical rigor with hands-on tool workflows:

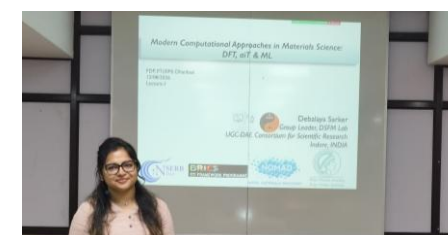
- Total Engagement:** 72 contact hours featuring 48 hours of interactive lectures and 24 hours of practical activities.
- Practical Workflows:** Direct exposure to SPICE simulations, MATLAB-based modeling, and TCAD demonstrations.
- Project Work & Evaluation:** Interactive project sessions, peer discussions, and an MCQ-based final assessment.
- Recognition:** Official certificate awarded upon successful completion of requirements.

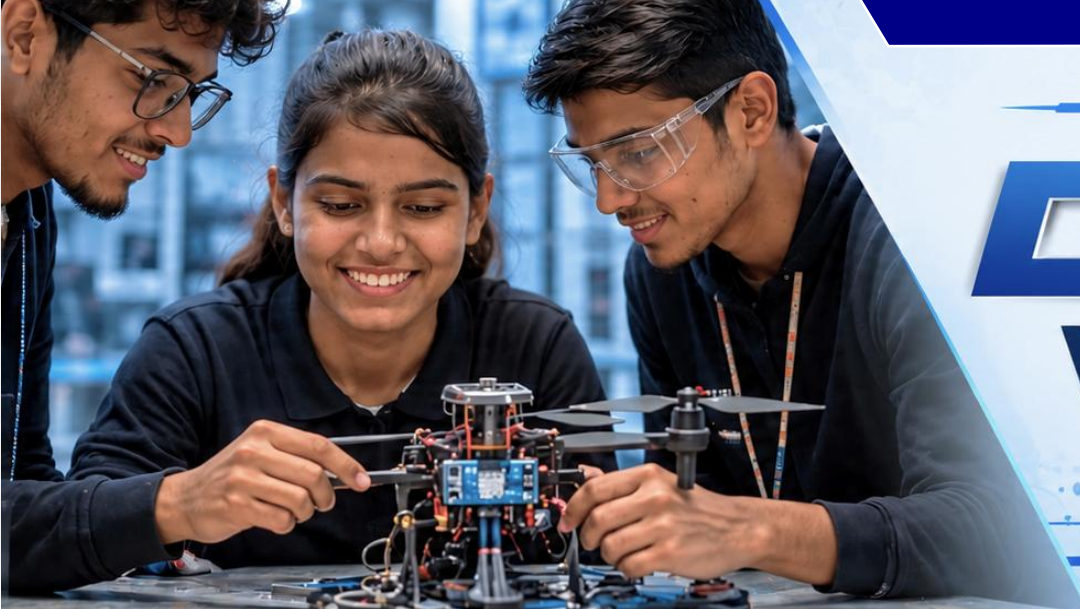
Key Learning Outcomes

- Gain actionable insights into device-aware circuit design.
- Analyze cross-layer interactions spanning materials, devices, circuits, and systems.
- Implement reliability-conscious strategies in next-generation electronic design.

Course Coordinator: Prof. Manodipan Sahoo, Department of Electronics Engineering, IIT (ISM) Dhanbad

Course Co-coordinator: Prof. Rajeev Kumar Ranjan, Department of Electronics Engineering, IIT (ISM) Dhanbad





— ONE DAY — **DRONE** WORKSHOP



The Department of ELeCtROnics Engineering, Indian Institute of Technology (Indian School of Mines) Dhanbad, organised a One-Day Drone Workshop on 22 August 2026, wherein 38 participants from Various institutions participatEd.

The day began with the history of hUman effortS to acHieve contRolled flight. This was followed by a discUssion on The basic principles of flight, helping participants develop a fundamental understanding of how and why an aircraft and drone fly. The sessions then moved towards the rapidly evolving field of Unmanned Aerial Vehicles and drones. Participants learned about the basic components that make up a drone and understood their function in enabling stable and controlled flight. This was followed by the hands-on drone assembly session. Participants worked with the components themselves and transformed individual parts into a functional flying machine.

Once the drones were assembled, participants proceeded to calibration and pre-flight checks. The workshop concluded in the most anticipated activity of the day: flying the drone made by the participants themselves. For many participants, this was the moment when all the hard work resulted in a tangible way. Seeing a drone taking flight provided a rewarding hands-on learning experience.

The response from the participants was positive. The overall feedback was excellent, with most participants enjoying the practical and interactive nature of the workshop. Certificates of participation were presented to all, while certificates of appreciation were awarded to the top three participants based on their performance in the quiz conducted during the workshop. Several participants also expressed interest in advanced drone workshops and hands-on projects, reflecting their enthusiasm to further explore the field of drone technology. The opportunity to work directly with drone hardware, assemble a functional drone, and experience its flight made the learning experience both engaging and memorable.



EXCHANGING IDEAS AND INNOVATIONS

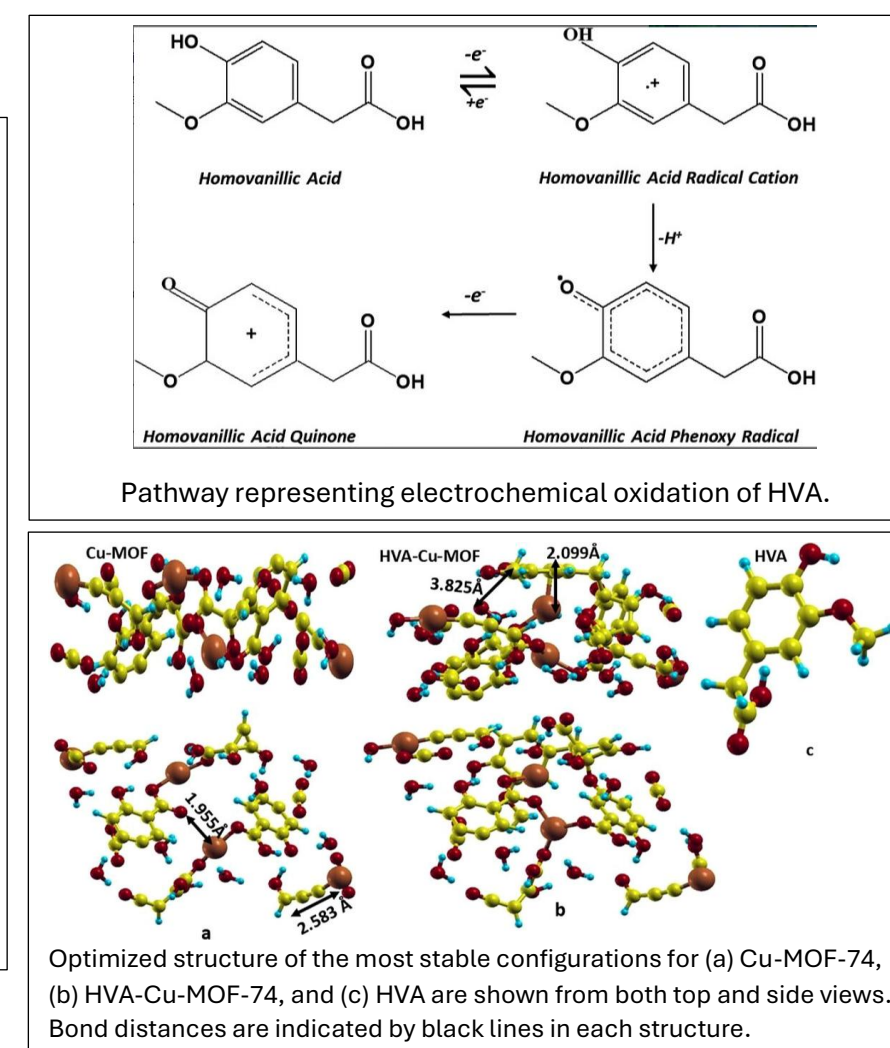
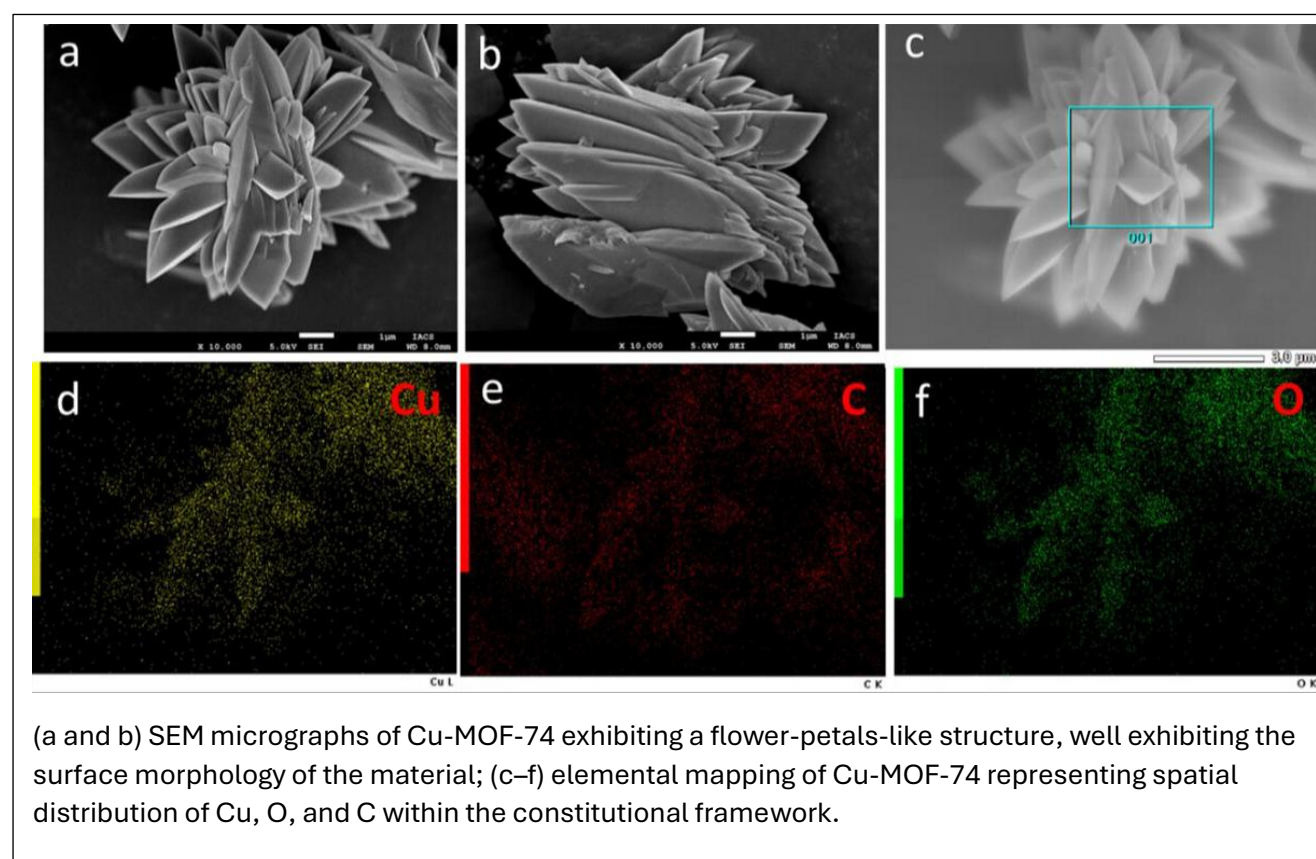
Prof. Y. M. Asha Latha delivered an expert session on “RF Power Amplifiers for 5G/6G Technologies” on 20 August 2026 as part of the Online Faculty Development Programme (FDP) on “Analog and RF IC Design: Fundamentals, Design Methodologies, and Emerging Applications.” The FDP was jointly organized by the Electronics & ICT Academy, NIT Warangal, and ABV-IIITM Gwalior. The session highlighted key design principles and practical considerations of RF power amplifiers, with particular emphasis on their role and design requirements for emerging 5G and 6G wireless communication systems.



PUBLICATIONS

D. Chowdhury, S. Mandal, A. Kumari, M. Sahoo, A. Bhaumik, and S. Roy, "*Cu-MOF-74-Modified Sensors for Homovanillic Acid Detection in Simulated Urine: DFT-Assisted Mechanistic Insight*", Journal of the American Ceramic Society, The American Ceramic Society,
DOI: <https://doi.org/10.1111/jace.71180>.

Rapid quantification of urinary catecholamine metabolites is important for neurochemical profiling and screening of neuroendocrine disorders. Here, a Cu-MOF-74 modification is made on a screen-printed planar electrode to enable selective detection of homovanillic acid (HVA) through an electrochemical route in buffer and artificial urine. Structural characterization confirms a crystalline porous framework in Cu-MOF-74 with accessible Cu(II) sites. The Cu-MOF-74-modified electrode shows an amplified anodic response and improved interfacial charge transfer relative to the bare electrode, giving a linear calibration from 0.1–100 μM and a limit of detection (LoD) of 47.9 nM. The response is stable in the presence of potential interferents (uric acid, dopamine, and ascorbic acid), with a strip-to-strip relative standard deviation of $\sim 3.2\%$. Density functional theory calculations for HVA at representative open Cu(II) nodes indicate adsorption-driven preconcentration with interfacial charge redistribution, consistent with the observed signal enhancement. These results highlight Cu-MOF-74 as a ceramic–organic electrocatalytic interface for urine-matrix electroanalysis and motivate validation using real clinical specimens.



PUBLICATIONS

Aman Sikri, Bassant Selim, and Georges Kaddoum, "Secrecy Performance of Cooperative Dual RIS-Aided Wireless Systems" IEEE Journals & Magazine | IEEE Xplore

DOI: <https://ieeexplore.ieee.org/abstract/document/11664149>

The broadcasting nature of the wireless signals renders the system particularly vulnerable to eavesdropping. This letter investigates the secrecy performance of cooperative dual reconfigurable intelligent surface (RIS)-aided wireless systems in presence of correlation, channel estimation errors (CEE), and phase quantization errors (PQE). In this regard, the secrecy outage probability (SOP) performance of the considered setup is investigated. It is shown that the secrecy performance can be improved by considering the active RISs as well as by allocating more elements to the RIS closer to the destination node in the cooperative path.

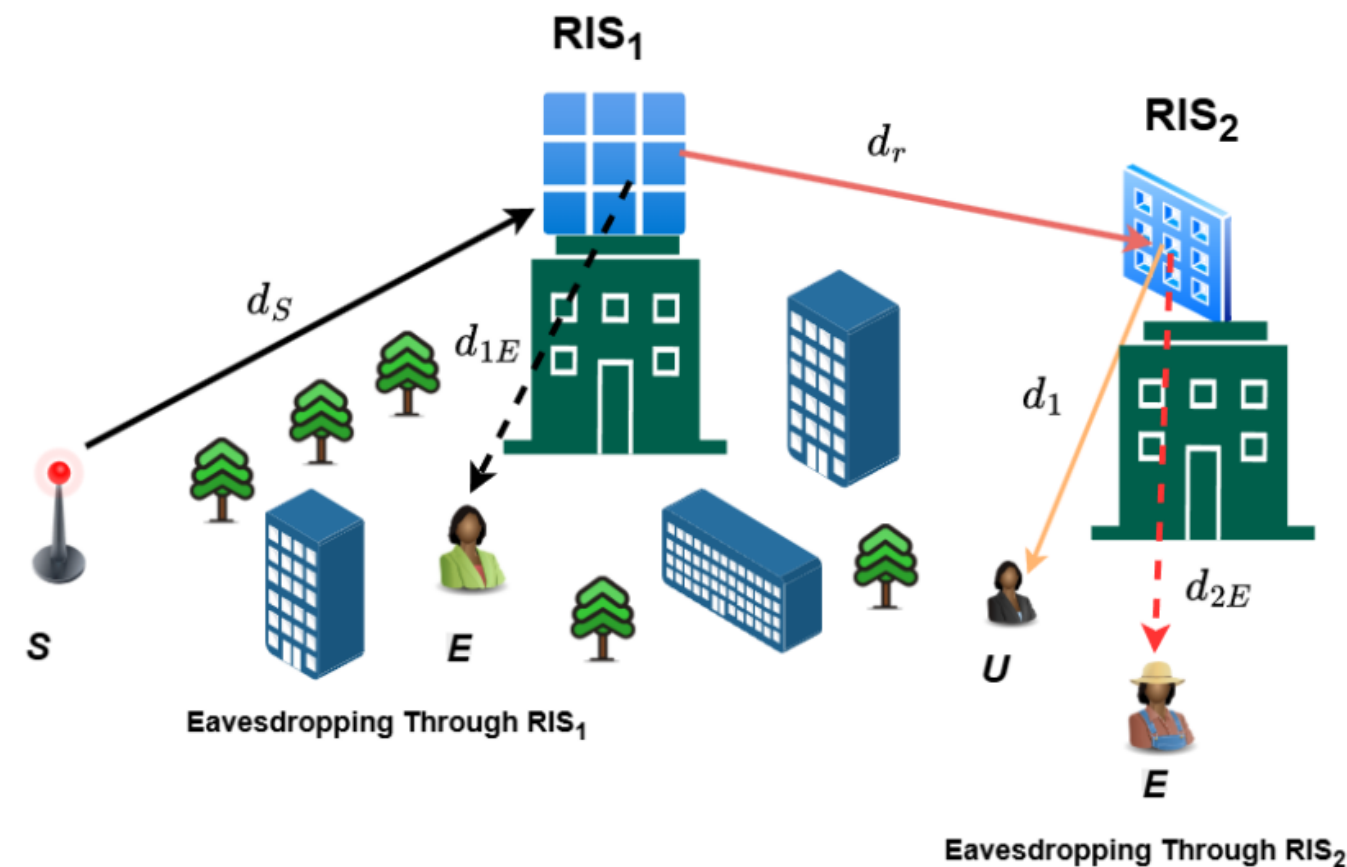
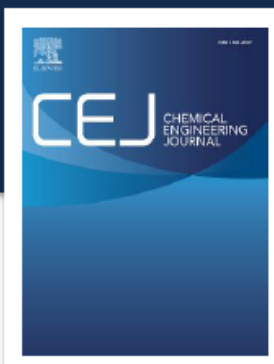


Fig. CDR-aided system in presence of eavesdropper.

ACHIEVEMENT



Editorial Board Appointment

Dr. Shalu Rani

has joined the Editorial Board of

Chemical Engineering Journal

Impact Factor: 12.5 (Q1), Cite score: 19.6

The Chemical Engineering Journal is a leading international journal publishing high-impact research across chemical engineering and interdisciplinary scientific fields such as Applied Biomaterials & Biotechnologies, Energy Conversion and Storage devices, Engineering materials, Sensors, etc.

RECOGNITION OF RESEARCH EXCELLENCE

The appointment reflects scholarly expertise, research contributions, and growing international academic recognition.

Department of Electronics Engineering, IIT (ISM) Dhanbad
Personal Website: <https://sites.google.com/view/synergylabs?pli=1>

EDITORIAL BOARD

CHEMICAL ENGINEERING
JOURNAL



A SIGNIFICANT MILESTONE

Contributing to peer review,
editorial excellence & impactful
research

Journal Website:

<https://www.sciencedirect.com/journal/chemical-engineering-journal>

#Research #EditorialBoard #ChemicalEngineering

आईआईटी में डिवाइस-सर्किट को-डिजाइन पर हाइब्रिड रिफ्रेशर कोर्स



धनबाद | आईआईटी-आईएसएम के इलेक्ट्रॉनिक्स इंजीनियरिंग विभाग ने "डिवाइस-सर्किट को-डिजाइन: फ्रॉम इमर्जिंग मैटेरियल्स टू इंटेलिजेंट सिस्टम्स" विषय पर 12 दिवसीय हाइब्रिड रिफ्रेशर कोर्स शुरू किया। यह आयोजन मालवीय मिशन टीचर ट्रेनिंग प्रोग्राम के तहत एमएमटीटीसी-यूजीसी की पहल के अंतर्गत हो रहा है। उद्घाटन सत्र एमएमटीटीसी के आईएच भवन में हुआ। डीन (अनुसंधान एवं विकास) पार्थसारथी दास मुख्य अतिथि रहे, जबकि कानपुर के शुभम सहाय विशिष्ट संसाधन

व्यक्ति के रूप में शामिल हुए। कोर्स समन्वयक मनोदीपन साहू ने बताया कि 111 प्रतिभागी ऑनलाइन और ऑफलाइन माध्यम से जुड़ रहे हैं। साहू के अनुसार पाठ्यक्रम का लक्ष्य क्रिटिकल खनिजों व उभरते पदार्थों पर शोध को सेमीकंडक्टर डिवाइस, सर्किट और इंटेलिजेंट सिस्टम विकास से जोड़ना है। सहस्र ने कहा कि को-डिजाइन में पूरे इलेक्ट्रॉनिक सिस्टम के प्रदर्शन पर फोकस जरूरी है। दास ने हेल्थकेयर, ऊर्जा व सतत विकास से जुड़ी अनुप्रयोग आधारित इंटर डिस्प्लिनरी रिसर्च पर जोर दिया।

Newspaper clippings report on the inauguration of a 12-day hybrid refresher course titled "Device-Circuit Co-Design: From Emerging Materials to Intelligent Systems" organized by the Department of Electronics Engineering at IIT (ISM) Dhanbad.

www.ksnewsupdates.com | UZ

आईआईटी-आईएसएम, धनबाद में डिवाइस-सर्किट को-डिजाइन पर रिफ्रेशर कोर्स की हुई शुरुआत

धनबाद : आईआईटी,आईएसएम, धनबाद के इलेक्ट्रॉनिक्स इंजीनियरिंग विभाग की ओर से सोमवार को डिवाइस-सर्किट को-डिजाइन फ्रॉम इमर्जिंग मैटेरियल्स टू इंटेलिजेंट सिस्टम्स, विषय पर 12 दिवसीय हाइब्रिड रिफ्रेशर कोर्स की शुरुआत हुई। यह कार्यक्रम मालवीय मिशन टीचर ट्रेनिंग प्रोग्राम ,एमएमटीटीपी, एमएमटीटीसी-यूजीसी इनिशिएटिव के तहत आयोजित किया जा रहा है। उद्घाटन समारोह एमएमटीटीसी, आईएच बिल्डिंग में हुआ। कार्यक्रम में आईआईटी,आईएसएम धनबाद के डीन, आरएंडडी प्रो० पार्थसारथी दास मुख्य अतिथि के रूप में शामिल हुए। आईआईटी कानपुर के प्रो० शुभम सहाय विशिष्ट रिसोर्स पर्सन के रूप में मौजूद रहे। इलेक्ट्रॉनिक्स इंजीनियरिंग विभाग के हेड प्रो० सुबिंदु कुमार, कोर्स कोऑर्डिनेटर प्रो० मनोदीपन साहू और को-कोऑर्डिनेटर प्रो० राजीव कुमार रंजन सहित शिक्षक, प्रतिभागी



और छात्र मौजूद थे। स्वागत संबोधन में प्रो० मनोदीपन साहू ने बताया कि कोर्स में करीब 111 प्रतिभागी ऑनलाइन और ऑफलाइन माध्यम से हिस्सा ले रहे हैं। उन्होंने कहा

कि अगले दो सप्ताह के दौरान आईआईटी, आईआईएसएम, सीएसआईआर लैबोरेटरीज और अन्य रिसर्च संस्थानों के विशेषज्ञ विभिन्न विषयों पर लेक्चर और टेक्निकल डिस्कशन करेंगे। उन्होंने कहा कि कोर्स का मुख्य फोकस क्रिटिकल मिनेरल्स और इमर्जिंग मैटेरियल्स से लेकर सेमीकंडक्टर डिवाइसेज, सर्किट्स और इंटेलिजेंट सिस्टम्स तक रिसर्च को एक साथ जोड़ना है। उन्होंने कहा कि देश में इंडिजिनस टेक्नोलॉजी और सेल्फ-रिलायंस को मजबूत करने के लिए क्रिटिकल मैटेरियल्स और मिनेरल्स के क्षेत्र में रिसर्च को डिवाइस और सिस्टम डेवलपमेंट से जोड़ना जरूरी है। प्रो० शुभम सहाय ने कहा कि मॉडर्न इलेक्ट्रॉनिक्स में को-डिजाइन बेहद महत्वपूर्ण है और डिवाइस या सर्किट को अलग-अलग तरीके से देखने के बजाय पूरे इलेक्ट्रॉनिक सिस्टम के परफॉर्मेंस पर ध्यान देना चाहिए। उन्होंने भारत में इंडिजिनस इलेक्ट्रॉनिक सिस्टम्स विकसित करने की

जरूरत पर जोर दिया। मुख्य अतिथि प्रो० पार्थसारथी दास ने इलेक्ट्रॉनिक्स, स्मार्ट मैटेरियल्स और डिवाइस-सर्किट डिजाइन को हेल्थकेयर, एनर्जी और सस्टेनेबल डेवलपमेंट जैसे क्षेत्रों से जोड़ने की जरूरत बताई। उन्होंने इंटरडिस्प्लिनरी रिसर्च को इनोवेशन और नेशनल डेवलपमेंट के लिए महत्वपूर्ण बताया। कोर्स के दौरान इमर्जिंग और क्रिटिकल मैटेरियल्स, सेमीकंडक्टर डिवाइसेज, डिवाइस मॉडलिंग एंड फैब्रिकेशन, इंटीग्रेटेड फोटोनिक्स, वीएलएसआई, कम्प्यूटेशन, माइक्रोवेव एंड आरएफ, सर्किट डिजाइन और इंटेलिजेंट सिस्टम्स जैसे विषयों पर सेशन होंगे। कार्यक्रम में देश के विभिन्न आईआईटी, सीएसआईआर लैबोरेटरीज, इसरो, एससीएल और अन्य अकादमिक संस्थानों के विशेषज्ञ 48 टेक्निकल सेशन लेंगे। कार्यक्रम का समापन 22 अगस्त को वेलैडिक्टरी सेशन के साथ होगा।

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. 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. 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. Samrat Mukhopadhyay

Assistant Professor

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

**Dr. Subhadeep Mondal**

Assistant Professor

Research Interest: Quantum computing, machine learning, signal processing, and next-generation communication systems, with an emphasis on developing mathematically grounded algorithms that bridge theory and real-world applications

**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. 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. Dheeraj Bharti**

Assistant Professor

Research Interest: Computer Vision, SLAM Robotics, Real-time Transformer-based Algorithms, 3-D Pose Reconstruction, SfM, Machine Learning, Statistical Signal Processing

**Dr. Mrinal Sen**

Associate Professor

Research Interest: Photonic Integrated Circuits, Embedded Systems.

FACULTY PROFILE



Dr. Nirupama Mandal

Associate Professor

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

Dr. Jitendra Kumar

Professor

Research Interest: Nano-optoelectronics, Nanoelectronics.



FACULTY PROFILE

Dr. Sushrut Das

Professor

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



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. Jaisingh Thangaraj

Associate Professor

Research Interest: Optical Networks, Wireless Sensor Networks, VANET, Software Defined Networks, Optical Instrumentation.



Dr. Ravi Kumar Gangwar

Professor

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



Dr. Santanu Dwari

Professor

Research Interest: RF & Microwave Engineering, Antenna.



Dr. Devendra Chack

Associate Professor

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



Dr. Prashant Kumar Varshney

Assistant Professor

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



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. 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. Nirjhar Kumar

Assistant Professor

Research Interest: Optical Vortex Beam Generation and Structured Light, Diffractive Optics and Plasmonic Meta surfaces, Opto-Electrochemical Sensing, Free-Space Optical & Quantum Communication



FACULTY PROFILE

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. Shalu Rani

Assistant Professor

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



Dr. Subindu Kumar

Professor

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

Dr. Rajeev Kumar Ranjan

Associate Professor

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



Dr. Manodipan Sahoo

Associate Professor

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



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. Kaushik Mazumdar

Associate Professor

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



Nanoelectronics and VLSI



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

ENGINEERING PROFESSIONALS APPLY

The Department of Electronics Engineering at IIT (ISM) Dhanbad is seeking highly motivated research personnel for multiple ongoing projects in cutting-edge domains such as 6G Communication, VLSI Design, MEMS, and Signal Processing. Applications are invited for various positions, including Junior Research Fellows (JRF) and Project Associates

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

<https://people.iitism.ac.in/~research/Projectopening.php>



Working at the Department of Electronics Engineering offers access to state-of-the-art laboratory facilities, a collaborative research environment, and the opportunity to enroll in a Ph.D. program (subject to departmental norms and performance).

EDITORIAL TEAM

Dr. Jeevesh Kumar, Mr. Vaibhav

[See earlier iterations of the newsletter](#)

SPARK 2026.08