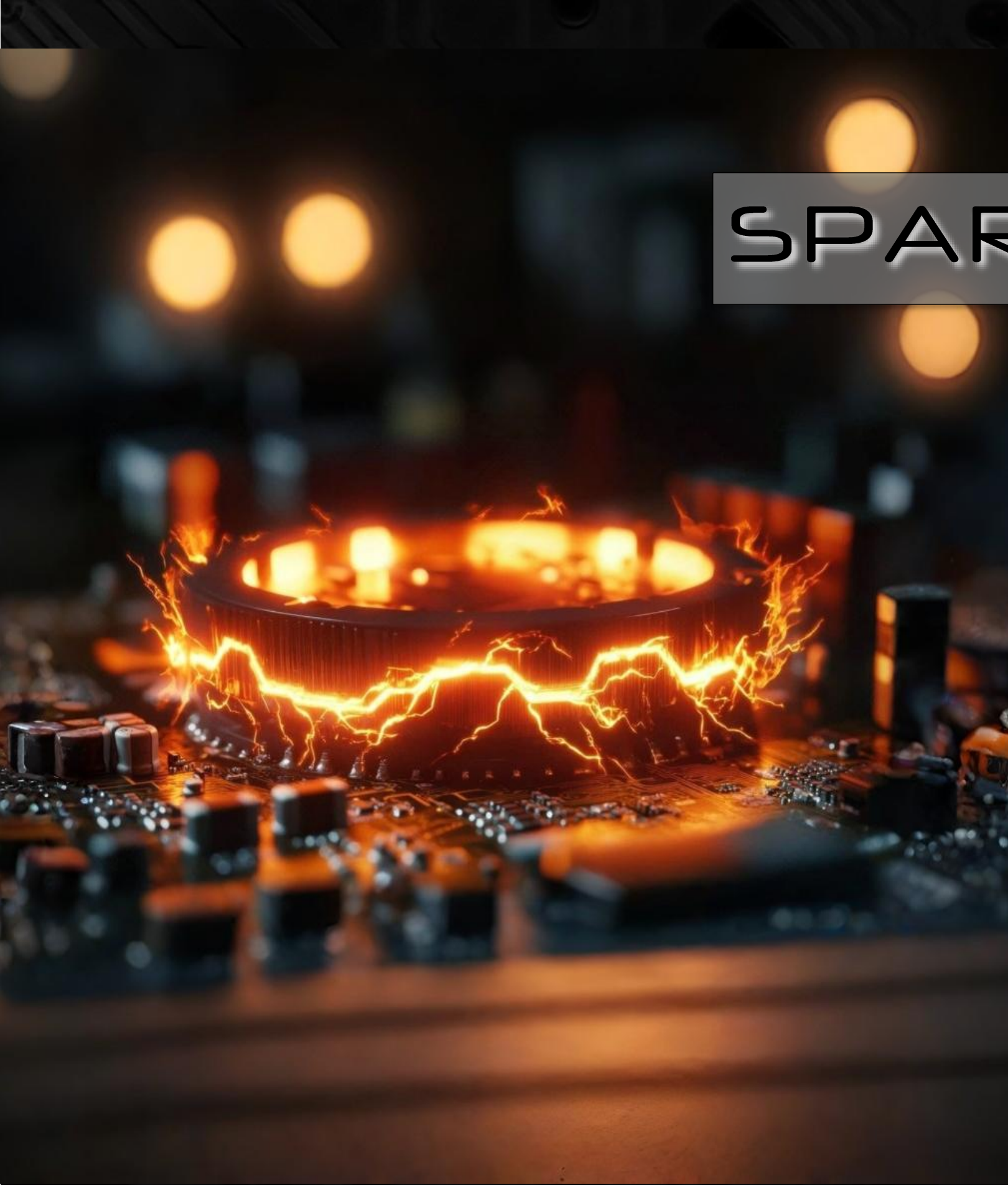




SPARK | e-NEWSLETTER

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



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HOD'S ADDRESS

Dear Readers,

We are excited to update you on the overall progress and highlight a few milestones that the Department of Electronics Engineering reached in April 2026.

The month began with welcoming our new faculty member Dr. Subhadeep Mondal to the department. Following this, our department participated in InvenTiv 2026 & showcased two antenna systems developed to solve modern communication challenges in real world applications.

In addition, our department successfully concluded a three-day national workshop on Emerging Trends in Microwave Photonics Technology, under the coordination of Prof. Sanjeev Kumar Raghuwanshi.

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*



EXCHANGING IDEAS AND INNOVATIONS

The Department of Electronics Engineering, IIT (ISM) Dhanbad actively participated in InvenTiv 2026. The event, organized by the Ministry of Education, was hosted by IIT (ISM) Dhanbad on April 6–7, 2026. The event brought together innovative projects from IITs, NITs and leading institutes across India.

Among many impressive demonstrations, our department showcased two antenna systems developed to solve modern communication challenges in real world applications. One focused on FPV drone video transmission using a lightweight circularly polarized antenna. The other offered a compact dual-band antenna for vehicular communication, capable of transmitting and receiving signals at the same time.

The centre of attraction was our live demonstration. Visitors were invited to wear VR goggles and watch real-time video coming directly from a drone camera. As the drone moved, the video remained clear and stable. For many, this was their first time experiencing such immersive technology.

The stall quickly became a lively space. Researchers from various institutes and faculty members stopped to discuss technical details. Students asked curious questions. Young visitors watched with excitement and amazement. There was a constant flow of people, all eager to understand how the system works and where it can be used.

Some wondered how the video remains stable when the drone keeps changing direction. Others asked if this technology could be used in delivery drones, surveillance, or smart vehicles. These conversations made the experience more interactive and meaningful.

When people could see the technology in action, they connected with it instantly and easily. Moreover, it sparked curiosity and inspired young minds to explore new directions. In that sense, our participation was truly a great success.



NATIONAL WORKSHOP

The Department of Electronics Engineering at IIT (ISM) Dhanbad successfully concluded a three-day national workshop on Emerging Trends in Microwave Photonics Technology, held from April 15th to 17th, 2026. Sponsored by the Anusandhan National Research Foundation (ANRF), DST Govt. of India and ARUP (New Delhi), the event was conducted in a hybrid mode to facilitate widespread collaboration in radar systems, wireless communication, and signal processing. Under the coordination of Prof. Sanjeev Kumar Raghuwanshi, the program was seamlessly managed by the organizing members, including Tirbhuwan Narayan Yadav, Paritosh Shukla and Ritik Sharma, a dedicated team of Junior Research Fellows (JRFs) and Senior Research Fellows (SRFs). The workshop featured a distinguished lineup of experts from premier institutions such as IISc Bangalore, CSIR- CSIO Chandigarh, CSIR-CGCRI, DRDO and various IITs and NITs. A central pillar of the event was the advanced technical training provided to the scholars. Participants received hands-on experience with Optisystem software for complex optical simulations and engaged in detailed Opto-electronics demonstrations. The curriculum also included specialized sessions on deposition systems for material fabrication and the characterization of Fiber Bragg Grating (FBG) devices, which are critical components for modern microwave photonics and high-frequency sensing applications. Industry leader Keysight Technologies enhanced the workshop with practical demonstrations, effectively bridging the gap between academic research and industrial requirements. Technical discussions focused on the future of photonic integrated circuits and phased-array radar systems, both of which are essential for the global rollout of 5G/6G infrastructure. Highlighting a commitment to inclusivity, the event saw significant participation from women and researchers from diverse backgrounds. The program concluded with a formal valedictory session where completion certificates were distributed to the participating scholars, marking a significant milestone in India's progress toward technological self-reliance.



Dr. Subhadeep Mondal

Assistant Professor

The Department of Electronics Engineering at Indian Institute of Technology (Indian School of Mines) Dhanbad is pleased to welcome Dr. Subhadeep Mondal as new faculty member. Dr. Mondal completed his doctoral research at Indian Institute of Technology Kharagpur, where he worked in the areas of quantum computing, tensor networks, quantum machine learning, and quantum-inspired signal processing. During his Ph.D., he was awarded the prestigious Prime Minister's Research Fellowship (PMRF) and was also recognized as a finalist in the Qualcomm Innovation Fellowship program. He also earned his M.Tech. in Wireless Communication and Networks from IIT Kharagpur.

His research contributions include innovative work on quantum state tomography, quantum-assisted signal detection and machine learning techniques for next-generation communication systems. Dr. Mondal has published in reputed international journals and conferences, reflecting his strong commitment to cutting-edge interdisciplinary research. Prior to joining IIT (ISM) Dhanbad, Dr. Mondal was associated with leading academic and research institutions, contributing to both teaching and advanced research activities in electronics, communication and quantum technologies. His expertise is expected to strengthen the department's research initiatives in emerging areas of electronics and intelligent systems.

The department warmly welcomes Dr. Subhadeep Mondal and looks forward to his valuable contributions in academics, research collaborations and student mentorship. We wish him a successful and fulfilling journey at IIT (ISM) Dhanbad.

Welcome



CONTACT

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E-mail: subhadeep@iitism.ac.in
Mobile: 8240168012

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. Samrat Mukhopadhyay

Assistant Professor

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

**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. 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. Nirupama Mandal**

Associate Professor

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

**Dr. Mrinal Sen**

Associate Professor

Research Interest: Photonic Integrated Circuits, Embedded Systems.

FACULTY PROFILE

Dr. Sushrut Das

Professor

Research Interest: Microwave Passive Networks, Antennas, Wireless Energy Transfer and Energy Harvesting Microwave Filters.**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. Prashant Kumar Varshney**

Assistant Professor

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

Associate Professor

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

Professor

Research Interest: Nano-optoelectronics, Nanoelectronics.**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.

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>



Applications Invited for Institute Post-Doctoral Fellowship (IPDF) at IIT (ISM) Dhanbad

Advertisement No. IPDF/DF/2026/01 dated 08 May 2026. Last Date to Apply: 06 June 2026. [LINK](#)

- ◆ Fellowship Duration: Up to 3 years (initially 1 year, extendable based on performance)
- ◆ Fellowship Support: ₹80,000 per month + applicable HRA + annual contingency grant of ₹1 lakh

EDITORIAL TEAM

Dr. Jeevesh Kumar, Mr. Bappa Ghosh, Mr. Vaibhav

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