



2026, February, Volume 4, Issue 1

ECE EXPEDITION



Striving for Competence
and
Advancing with Commitment

BIRLA INSTITUTE OF TECHNOLOGY MESRA
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CONTENTS

EDITORIAL

EDITORIAL TEAM

TECHNOLOGY VISION ARTICLE	01
DEPARTMENTAL ACTIVITIES	02
JOURNAL PUBLICATIONS	11
CONFERENCE PUBLICATIONS	14
PATENTS	16
WORKSHOPS/SEMINARS ATTENDED	17
INVITED TALKS	19
OUTREACH ACTIVITIES	21
AWARDS / ACHIEVEMENTS	25
PHDS AWARDED	26
STAFF ACTIVITIES	27
STUDENT SECTION	28
DOWN THE MEMORY LANE	29

EDITORIAL

FROM EDITOR-IN-CHIEF'S DESK



With extreme pleasure, I am presenting the seventh issue of the 'ECE Expedition', the newsletter of our department, published half-yearly. I express my deep appreciations and sincere thanks to the editorial team. Also, on behalf of the editorial team, I extend heartfelt thanks to each member of the department for their achievements and contributions toward the worthy expedition of the department.

During the last six months (Jul-Dec 2025) the department has made significant contributions in various domains such as teaching and research, product development, sponsored projects, outreach activities and students' achievements. I am sure this issue will give a glimpse of the above.

The theme of this issue is "Striving for Competence and Advancing with Commitment". We agree, the technological landscape is changing too fast today. The best way to embrace the change and remain aligned and effective is by Striving for Competence and Advancing with Commitment. Between what we do and what we can do, lies the potential for growth and solutions to all the problems. This gap must be bridged. Let us re-invent ourselves to become aware of our own blind spots and boundless potentials. This will help us thrive, not just work, will also empower us to perform leading to open up immense possibilities. We must have extreme awareness of the technological developments as well as the eco system around, where lies the ocean of opportunities.

I take this opportunity to congratulate the entire department for their sincere involvement and spirit of team work. Our department has a longstanding reputation for academic excellence, research and innovation. Let us march forward with the same spirit, leading to excellence.

Thank you and best wishes
Prof. Sanjay Kumar
EDITOR-IN-CHIEF

EDITORIAL TEAM



Prof. Sanjay Kumar
Professor
Editor in Chief



Dr. Vishal H. Shah
Assistant Professor
Editor

ASSOCIATE EDITORS



Dr. D. Gola
Assistant Professor
Information Management



Dr. P. P. Dash
Assistant Professor
Transcription



Dr. R. Mishra
Assistant Professor
Creative Design

STUDENT SUB-EDITORS



Prashant Kumar Gautam



Anand Kashyap



Aditya Anand



Pranjal Agrawal



Abhyuday Pandey



Ayush Raj

Information management

Content Writing

Creative Design

TECHNOLOGY VISION

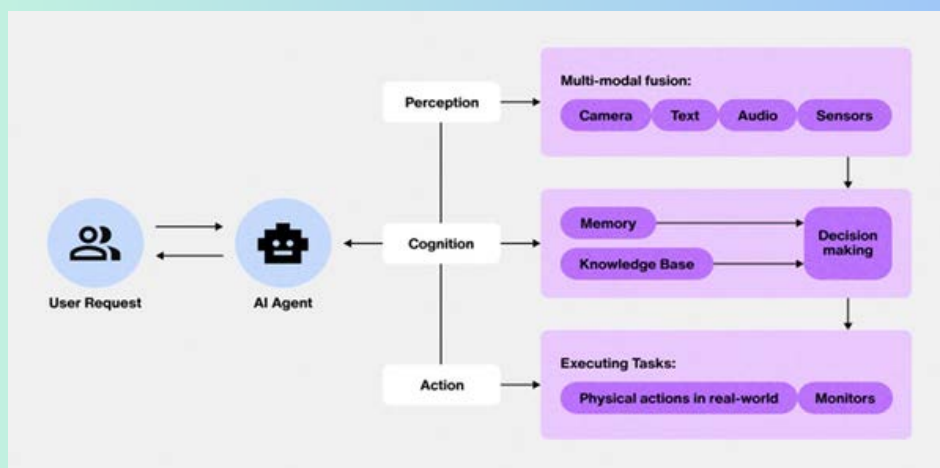
AI AGENTS: SHAPING COMMUNICATION

*Tashi, Anusha V.**

*Assistant Professor, ECE Department, *Birla Institute of Technology, Mesra, Ranchi, Jharkhand - 835215,*
Email - *anusha@bitmesra.ac.in*

An AI agent or assistant is an intelligent system built using Artificial Intelligence (AI) modules that helps users analyze information, make predictions, and support decision making. Its key strength lies in being simple enough for non-experts to interact with and work autonomously to achieve specific goals. AI agents bridge the gap between human interaction and technological interfaces through natural language processing, facilitating seamless human-machine interaction. These agents, including chatbots, virtual assistants (like Siri, Alexa), and intelligent call systems, handle tasks, provide instant information, and offer customer service. They comprehend speech, interpret intent, respond instantly, and adapt to user behavior. This capability significantly improves areas like customer service, healthcare communication, multilingual translation, and accessibility for users with limited digital literacy.

AI agents significantly benefit Electronics and Communication Engineering. In communication systems, they streamline signal processing, mitigate noise, manage network traffic, and improve bandwidth, aiding technologies like 5G and IoT through adaptive modulation, error correction, and spectrum management. In electronics, AI agents assist in circuit design, error detection, predictive maintenance, and hardware optimization by analyzing sensor data, mitigating human error, and boosting system reliability.



Similarly, in an office or college setting, AI virtual assistants can auto-respond to emails, schedule meetings, and provide instant information round the clock. This ensures uninterrupted communication and timely responses, improving efficiency and reliability by seamlessly supporting daily tasks and decision-making when humans are constrained by time or workload. AI agents have evolved beyond mere supportive tools to become powerful collaborators, significantly boosting human efficiency and improving decision-making. Their capacity for learning, adaptation, and facilitating effortless communication establishes them as a major technological leap for our time.

DEPARTMENTAL ACTIVITIES

IEEE International Conference on Communication and Smart Devices ICCoSD-2025



Technical Co-sponsorship of IEEE Kolkata section

25th – 26th July'2025

“Connecting Intelligence”

Department of Electronics and Communication Engineering
Birla Institute of Technology Mesra, Ranchi, INDIA



1. The Department of Electronics and Communication Engineering, BIT Mesra organized an IEEE International Conference on Communication and Smart Devices (ICCoSD)-2025 with a theme “Connecting Intelligence” during 25th-26th July'2025. The event commenced on 25th July 2025 with an inaugural session in the presence of our Hon'ble Vice Chancellor, Prof. Indranil Manna. The function started with Institute prayer, lighting of ceremonial lamp and facilitation of dignitaries on Dias. The welcome address and conference overview were given by DR, Gajendra Kant Mishra, Convenor, ICCoSD followed by 'Insight about Institute' by Prof. Sanjay Kumar, Chairman, ICCoSD, HoD, ECE. Prof. Indranil Manna, Patron, ICCoSD, Vice Chancellor, BIT Mesra delivered the 'guiding thoughts'. 'The word of Wisdom' was delivered by Chief Guest, Mr. Varun Ranjan, IAS, Managing Director, Jharkhand Industrial Infrastructure Development Corporation Ltd. (JIIDCO). The Guest of Honor, Professor Saswat Chakraborty, Professor, G.S. Sanyal School of Telecommunications, IIT Kharagpur, addressed the gathering with his valuable insights. After the vote of Thanks by Dr. Sanjeet Kumar the Co-convenor, ICCoSD, the dignitaries on the dias officially released the conference souvenir.

DEPARTMENTAL ACTIVITIES



After the High Tea the Plenary Talk was delivered by Prof. Saswat Chakrabarti, Professor at the GS Sanyal School of Telecommunications, IIT Kharagpur, and a keynote talk by Prof. Preetam Kumar from the Department of Electrical Engineering, IIT Patna. The session concluded with an Invited Talk by Prof. Xiao-Zhi Gao, Professor at the University of Eastern Finland, who joined and shared his insights on online mode. The conference received a vast response with 670 research paper submissions from India and abroad. Support from a team of 349 reviewers from various reputed organizations helped finalizing the best quality papers.



After undergoing a rigorous multi-stage review process, a total of 104 high-quality paper were selected and presented by research scholars showcasing a wide range of innovative work and experimental studies from various parts of India and even from international institutions in these two days. The conference adopted a hybrid format, accommodating both online and offline presentations to ensure broad participation. The presented papers are included in the conference abstract proceedings and will be published in IEEE Xplore.



DEPARTMENTAL ACTIVITIES



On the first day, 55 technical papers were presented under 5 parallel sessions. The sessions were marked by active engagement, rigorous academic discussions, and a vibrant exchange of ideas, making the conference a rich learning experience for all involved.

By the end of the 1st day of the conference a refreshing cultural evening was thoughtfully organized by our cultural committee to provide a welcome break from the day's intense academic engagements.

The event was a vibrant celebration of India's rich cultural heritage, where talented artists from across the country showcased their exceptional skills through music and dance performances. This was followed by a gala dinner, providing an excellent opportunity for everyone to interact, connect, and engage in informal discussions.

26th July "The second day of the event commenced with a series of thought-provoking, ground breaking, and knowledge-enriching invited talks.



The sessions began with an online talk by Dr. Sumit Chakravarty, Associate Professor at Kennesaw State University, USA. This was followed by an insightful talk by Prof. Ganapati Panda, Professor and Research Advisor at C.V. Raman Global University, Bhubaneswar, Odisha. His address combined decades of academic expertise with visionary perspectives on emerging trends, leaving the audience both enlightened and inspired.

DEPARTMENTAL ACTIVITIES

Dr. Rajeev Kumar Ranjan, Associate Professor in the Department of Electronics Engineering at IIT (ISM) Dhanbad, Jharkhand, also delivered a compelling session, contributing valuable perspectives. The sequence of invited talks concluded with an engaging presentation by Dr. Manish Okade, Associate Professor in the Department of Electronics and Communication Engineering at NIT Rourkela."

The other half of the day again marked the technical presentation by the remaining 49 participants organized under Six parallel sessions, held across different venues within the institute.

At last, the event concluded with the valedictory function which was organized on 26th July'2025 evening. The function started with concluding remarks by Convenor Dr. Gajendra Kant Mishra, and further addressed by Chief guest, IAS Ms. Nancy Sahay, Directorate of Municipal Administration, Department of Urban Development & Housing Government, Jharkhand and an alumnus of BIT Mesra and Prof SS Solanki, Dean PGS, BIT Mesra, the Guest of Honour of the function. The function further followed a feedback session by participants and a certificate distribution ceremony among the participants and organizing body.

These two-day of technical presentation in the conference has left a lasting impression on all.

ICCoSD 2025 has just not served as a forum for academic discussions but has become a driving force for lasting collaborations, practical innovations, and meaningful contributions to national development. It has inspired a spirit of lifelong learning and active participation among young researchers, setting them on the path to become future leaders in the field of science, technology, and innovation.



DEPARTMENTAL ACTIVITIES

2. Prof. Sanjay Kumar Convened a three weeks Students' Induction Program (SIP) for the newly admitted UG & PG students of MO 2025 Batch at BIT Mesra, Ranchi, 25 August-12 September 2025.



3. Prof. Sanjay Kumar Conducted an interactive session on the theme of Creating the future you desire during the Students Induction program at BIT Mesra, Ranchi 29th August-12th September 2025.



DEPARTMENTAL ACTIVITIES

4. Dr. Priyank Saxena organized a three-day workshop on IoT & Embedded Systems under the aegis of Tech-a-Thon, the flagship event of the ECE Society, held from August 20–23, 2025.



5. A 2-day Verilog hardware description language training was organized in the ECE Department from 31.07.25 till 01.08.25.



DEPARTMENTAL ACTIVITIES

6. The Certificate Distribution Ceremony for the BIT ECE Summer Internship Program for Advanced Research (SIPAR 2025) was held on 12th August 2025 to honor the contributions of volunteers, technical staff, and mentors associated with the program. The event was presided over by Prof. Sanjay Kumar, Head of the Department of ECE, and was coordinated by Dr. Vijay Nath and Dr. Richa Mishra. On this occasion, the HoD appreciated the dedicated efforts and valuable support extended by all participants towards the successful execution of the program.



7. Mr. Vishal H. Shah served as the Coordinator for the visit of Er. V. B. Singh, President, IEI, to the institute on 1st August 2025, overseeing arrival, departmental visits, and interactions with senior leadership.



8.1. The Department of Electronics and Communication Engineering, BIT Mesra, organized a Faculty Interaction Session with Dr. M. Bhaskar, NIT Trichy, on 31 October 2025. The session enabled insightful discussions on academic practices, research directions, and collaborative opportunities with faculty members.



DEPARTMENTAL ACTIVITIES

A Departmental Picnic was organised on 30.11.2025. Faculty members and staff with families went to Patratu riverside for departmental picnic.



DEPARTMENTAL ACTIVITIES

The Postgraduate and PhD students of the ECE Department celebrated Teachers' Day on 3rd September at the ECE Seminar Hall in the presence of faculty members. The event included a traditional cake-cutting ceremony and served as a warm gesture of gratitude and appreciation for the teachers' contributions.

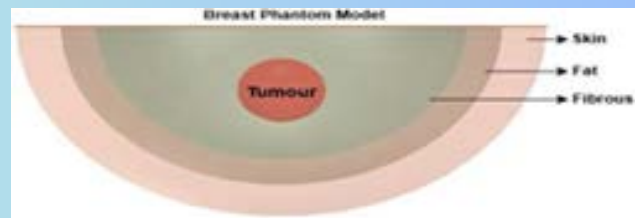
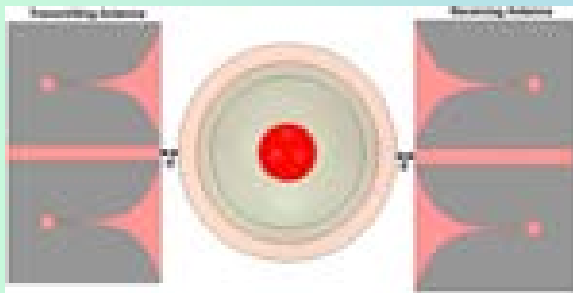


Prof. Nisha Gupta retired on 30th November 2025. A farewell was organized by the department of ECE on 26th November 2025. Few faculty members from other departments also joined the farewell ceremony.



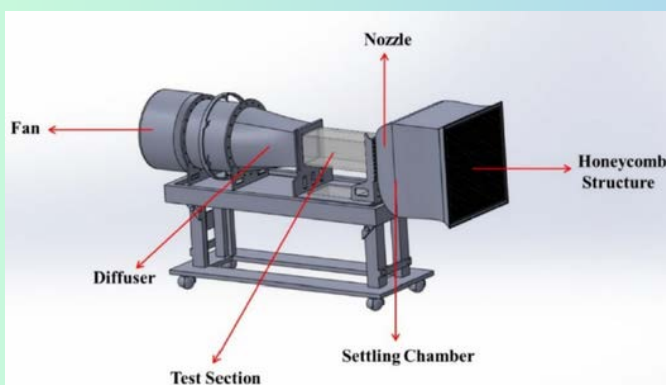
JOURNAL PUBLICATIONS

1. MD Afaque Azam “THz Drone System with Non-Ideal Hardware, Beam Misalignment Error and Mutual Coupling.”, Physical Communication, vol. 72, pp. 102819, October 2025..
2. Sharmeen Sultana, **Neela Chatteraj***, “Early Detection of Breast Tumour Using Quasi-Static Microwave Imaging with Two Elements Tapered Slot Vivaldi MIMO Antenna” IJRTE, Vol. 14 Issue-4, pp.33-37, November 2025, ISSN: 2277-3878

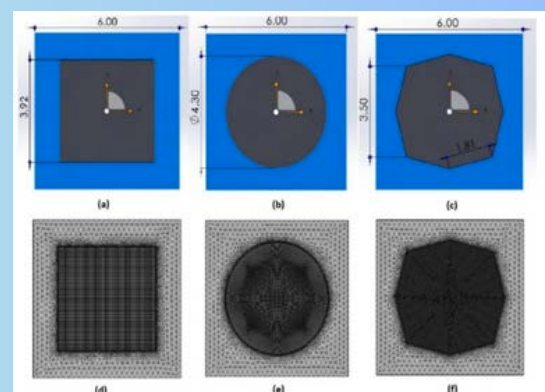


Breast Phantom model Model with Transmitting and Receiving Antenna

3. Rahul Kumar Singh, Pallavi Patel, **Neela Chatteraj**, Vinod Belwanshi, **Richa Mishra***, “Enhancing Pressure Sensor Performance Through Diaphragm Geometry Optimization for Subsonic Applications”, Microsyst Technol (2025), volume 31, pp3603-3623, August 25, <https://doi.org/10.1007/s00542-025-05918-w>



Diaphragm geometry design and meshing for square, circular and octahedral structures



Schematic of subsonic wind tunnel (containing Fan, Diffuser, Test section, Nozzle, settling chamber and Honeycomb structure) .

JOURNAL PUBLICATIONS

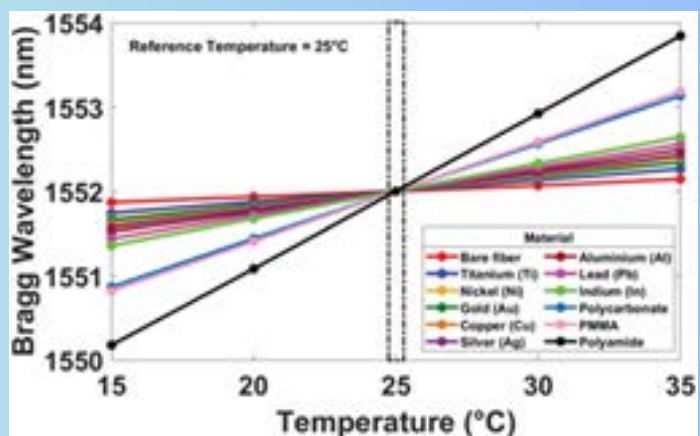
4. Prem Nath Suman, Gajendra Kant Mishra*, “Design and Performance Analysis of a Frequency Reconfigurable Antenna for Wireless Applications”, Microwave Review July 2025, Vol. 31, No. 1, pp. 8-12 DOI: 10.18485/mtts_mr.2025.31.1.2



5. Prem Nath Suman, Vijay Nath, Gajendra Kant Mishra, “A Compact Multiport Sensing and Communicating Antenna System for Cognitive Radio Applications,” Indian Journal of Pure & Applied Physics (IJPAP), vol 63, no.2, 17.12.2025, DOI:

<https://doi.org/10.56042/ijpap.v63i12.21438>

6. Mandal, H. N., & Sidhishwari, S. (2025). Enhancement of Temperature Sensitivity of Apodized FBG Using Various Coating Materials for the Quasi-Distributed Sensing Approach. IETE Journal of Research, 1–18. <https://doi.org/10.1080/03772063.2025.2585168>

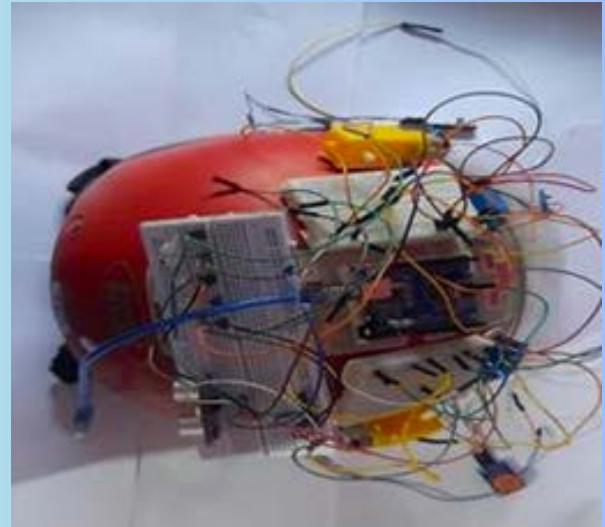


Sensitivity for the quasi-distributed network coated with various substances for various temperatures (°C)

JOURNAL PUBLICATIONS

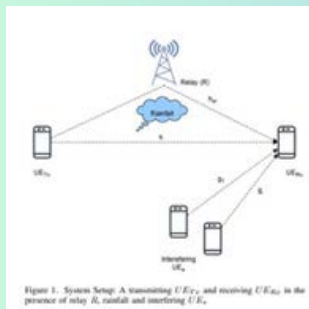
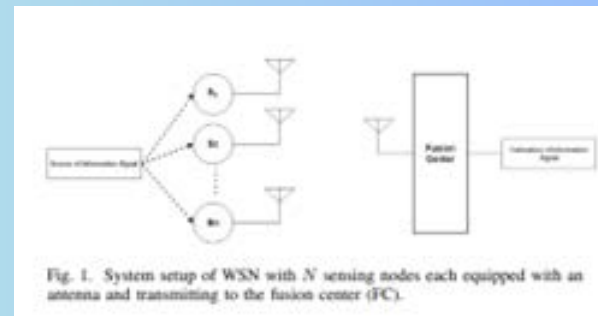
7. Shreyansh Kumar Singh, Devansh Upadhyaya, Megha Dadel and Shiv Kumar Choubey, "Accident detection & alert system for 2-wheel vehicles using helmet", International Journal of Electronic Devices and Networking 2025; 6 (2): 01-06

DOI: [10.22271/27084477.2025.v6.i2a.76](https://doi.org/10.22271/27084477.2025.v6.i2a.76)



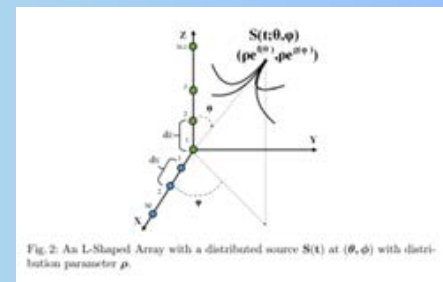
8. S. Srivastava, R. Kumar, and P. P. Dash, "Enhancing non-orthogonal multiple access systems: A reconfigurable machine learning classification approach," Eng. Appl. Artif. Intell., vol. 161, p. 112080, 2025, doi: 10.1016/j.engappai.2025.112080.
9. Abhishek Thakur, Sudhansu Kumar Mishra, Monica Bhutani, Prajna Parimita Dash, Prabhat Kumar Upadhyay, and Sitanshu Sekhar Sahu. "Deep learning approaches for detecting malignant melanoma in dermoscopic imagery." International Journal of Information Technology (2025): 1-19.
10. J. S. Sethi, S. K. Mishra, P. P. Dash, and M. Bhutani, "Secure image encryption with optimized chaotic sequences and multi-layer cryptographic operations," SN Comput. Sci., vol. 6, art. 879, 2025, doi: 10.1007/s42979-025-04407-1.
11. Pandit Vivek Kumar Pandey, Sitanshu Sekhar Sahu, "Parkinson's Disease Detection Using Hybrid Siamese Neural Network and Support Vector Machine in Multilingual Voice Signal" Journal of Voice, 4:S0892-1997(25)00261-9, Aug. 2025
12. Pandit Vivek Kumar Pandey, Sitanshu Sekhar Sahu, "Cascade Convolutional Neural Network-Autoencoder Method for Parkinson's Disease Detection Using Multilingual Voice Signal" SN Computer Science, Vol 6 (802), pp:1-12, Sept 2025
13. Uday Kumar, Dileep Kumar Upadhyay, "A Wideband 90° BLC Using CRLH-TL with TS-OSSIR for C-Band Applications," Electromagnetics, pp, 1-22, Aug. 2025.

1. “Data Estimation in Wireless Sensor Network with Interference and Hardware Distortion,” MD Afaque Azam, Presented at ICCoSD25.

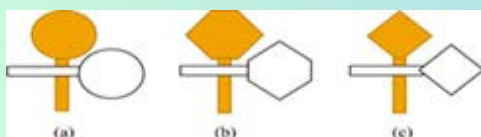


2. “Relay Assisted Device to Device Communication with Rainfall, Hardware Impairment and Interference,” MD Afaque Azam, Presented at ICCoSD25.

3. 2-D DoA Estimation for L-Shaped Sensor Arrays with Distributed Source Models,” MD Afaque Azam, Presented at ICSDP25.

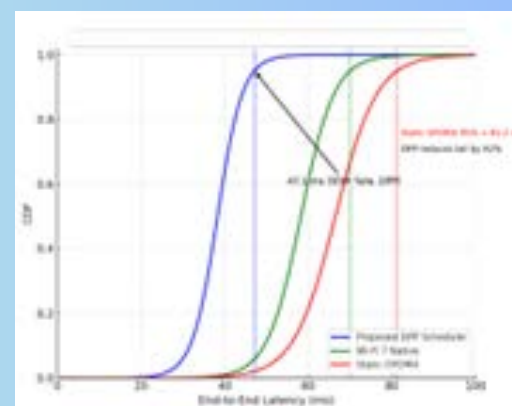


4. Analysis of Feeding Structure of Wide Band Antenna for Wireless Application” Chanchala Kumari, Neela Chatteraj, 2025 Third International Conference on Microwave, Antenna and Communication (MAC), ISBN:979-8-3315-0369-7, IEEE Explorer September 2025, <https://doi.org/10.1109/MAC64480.2025.11140435>



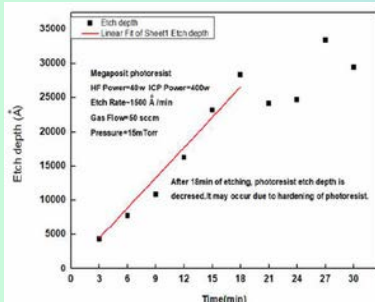
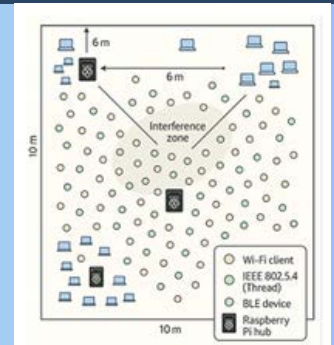
Feeding Network Transitions (a) Circular/Circular (b) Hexagonal/Hexagonal (c) Rectangular/Rectangular

5. Atul Kumar, Gajendra Kant Mishra “Lightweight Closed-Loop Scheduling for Wi-Fi 7 EHT with Matter QoS Flows,” IEEE International Conference on Communication Networks and Computing (CNC-2025), 29th-30th Dec’2025, organized by Rajkiya Engineering College Sonbhadra, Uttar Pradesh, INDIA.



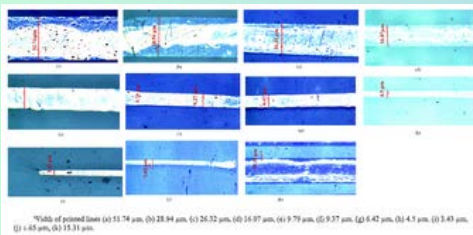
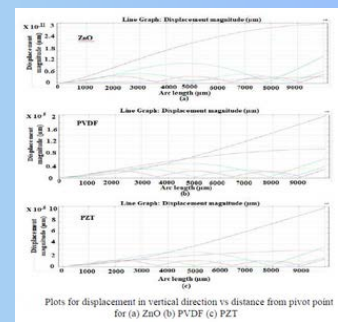
CONFERENCE PUBLICATIONS

6. Atul Kumar, Gajendra Kant Mishra, "Testbed Evaluation of MR-Gov: The Multi-Radio Coexistence Governor," 8th IEEE Pune section International Conference on Theme: Generative Futuristic Systems (IEEE PUNECON 2025), 12th-15th Dec'2025, organized by Savitribai Pune University and IEEE Pune section, Pune, Maharashtra, INDIA



7. S.K. Singh, Guruswamy Rajaram, R. Mishra, Comparative Analysis of Sputter Etch Rates of photoresists on glass under ICP-RIE Conditions, IEEE International Conference on Communication and Smart Devices (ICCoSD)-2025, Birla Institute of Technology, Mesra, 25th & 26th July, 2025.

8. S.K. Singh, R. Mishra, Simulation Based Comparative Analysis of Piezoelectric Energy Harvester Using Three Different Materials, IEEE International Conference on Communication and Smart Devices (ICCoSD)-2025, Birla Institute of Technology, Mesra, 25th & 26th July, 2025.



9. Atul Arya, Sachin Kumar Singh, Richa Mishra, Vimal Kumar Singh Yadav, Sitanshu Sekhar Sahu, "Direct Writing of Silver Nanoparticle Patterns through Liquid Micropatterning", 7th International Conference on Emerging Electronics (ICEE) 2025, Bangalore, India

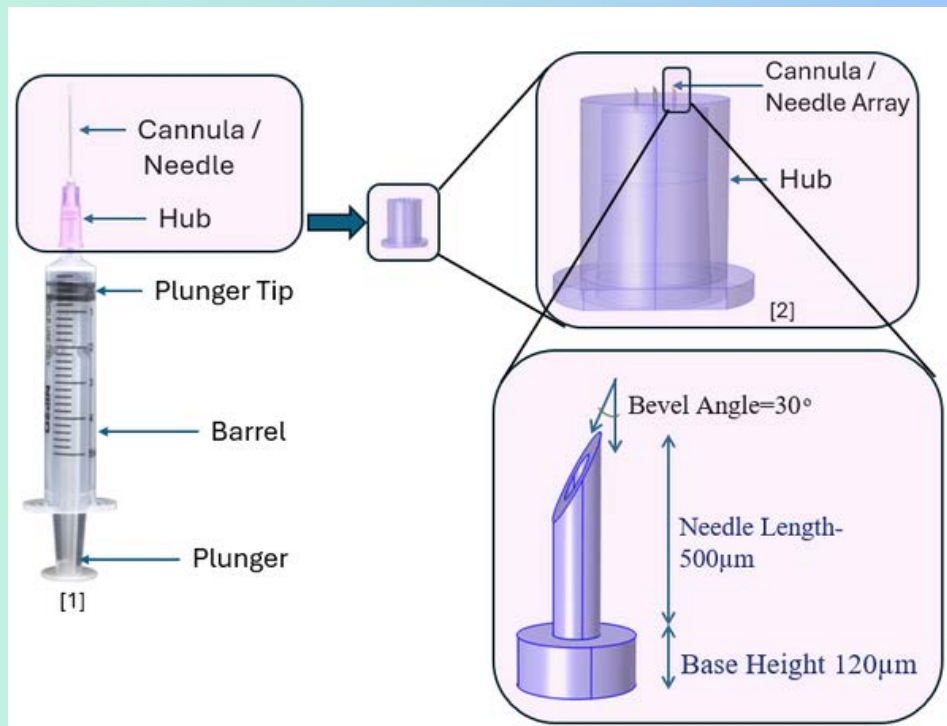
10. A Kispotta, S S Sahu, RK Sinha, "AI-powered Diagnosis of Voice Disorders Using Mel-frequency feature and Machine Learning" IEEE International Conference on Computer Vision and Machine Intelligence, 12-13 Oct. 2025, NIT Rourkela.

11. Prity Bharti, Deepti Gola and Sandeep Singh Solanki, "Influence of Biomolecule Dielectric Variation on Analog Parameters of Trigate Junctionless FET for Biosensing" 13th International Conference on Intelligent Embedded, Microelectronics, Communication and Optical Networks (IEMECON 2025), 8th-10th December, Jaipur, Rajasthan.

12. Uday Kumar, Dileep Kumar Upadhyay, "A Concave Circular Brick-Shaped Metamaterial-Inspired Superstrate Based High-Gain Microstrip Patch Antenna for Wideband Applications" The 3rd International Conference on Microwave, Optical and Communication Engineering (ICMOCE-2025) School of Electrical and Computer Sciences, IIT Bhubaneswar, 23-25, May 2025. Presented on 25th May 2025.

PATENTS

1. Sachin Kumar Singh, Richa Mishra, Digvijay Singh Jodha, Hollow Microneedle Array for Drug Delivery and related Method, Application number – 202531078756 A, Indian patent published 29.08.2025.



2. S.S.Sahu , “A System for Real Time Detection of Parkinson’s Disease”, Method and Utility (Indian Patent Application No: 202531093457)

WORKSHOPS/SEMINARS ATTENDED BY FACULTY MEMBERS

1. Dr. Gajendra Kant Mishra has visited IIT Indore to participate in National Workshop on Recent Advancement in Stealth Technologies for Airborne Applications “RASTAA 2025”. The event was scheduled on 18-19 September, 2025. It was Jointly Organized by Aeronautical Development Establishment, ADE-DRDO, Bangalore & Department of Electrical Engineering, IIT Indore in collaboration with IEEE APS SBC, IIT Indore



2. Prof. Sanjay Kumar participated in a DoT-Supported One-day Workshop on 5G for the faculty members of 100 5G Use Case Lab institutes/universities

3. Prof. Sanjay Kumar attended India Mobile Congress 2025 organized by the Department of Telecommunications (DoT) in collaboration with the Cellular Operators Association of India (COAI)



4. Dr. Megha Dadel has attended one week FDP on “Drone and IOT Technology for CIS and Smart Farming Applications” from 2nd to 6th June, 2025 organized by Dept. of CSE, BIT Patna in collaboration with E & ICT academy Phase II, NIT Patna.

WORKSHOPS/SEMINARS ATTENDED BY FACULTY MEMBERS

5. Dr. Sanjeet Kumar and Dr. S.S. Sahu have participated in the Emerging Science, Technology & Innovation Conclave- ESTIC-2025, at Bharat Madapam, New Delhi Organized by DST, Govt. of India.



6. Dr. P. P. Dash has attended eight days summer school program at IIT Guwahati on “Language and Vision with AI/ML ” from 30th June to 7th July 2025.
7. Dr. P. P. Dash has attended five days FDP organised by MMTTC, IIT Patna (14th July-18th July 2025).
8. Dr. Deepti Gola has attended five days FDP organised by MMTTC, IIT Patna (14th July-18th July 2025).
9. Dr. Richa Mishra, BIT Mesra, participated in the Indo–Taiwan Joint Workshop on Semiconductor Packaging and Testing held online. The workshop provided valuable insights into advanced semiconductor technologies and international research collaboration.
10. Dr. Richa Mishra participated in the Foundational Workshop on Semiconductor Manufacturing conducted online by the Centre for Nano Science and Engineering, IISc Bengaluru, from 18 to 26 August 2025. The workshop focused on core concepts and practices in semiconductor manufacturing technologies.
11. Dr. Sitanshu Sekhar Sahu and Dr. Sanjeet Kumar attended the CEEE program sponsored by INAE-Infosys foundation at IIT Bombay.
12. Dr. Richa Mishra attended the second phase (online) of the INAE-INFOSYS CEEE Mentoring Program held at Indian Institute of Technology, Kharagpur, 6th September -21st December, 2025.

INVITED TALKS DELIVERED BY FACULTY MEMBERS

1. Dr. Gajendra Kant Mishra has visited BIT Deoghar campus as an invited speaker on 7th December 2025 to deliver a talk on "How to shape ideas towards startup?". The event was organized by The Institution's Innovation Council (IIC), BIT Mesra – Off-Campus Deoghar. This session was designed to provide foundational insights into startup and entrepreneurship, specifically tailored for students and early-stage innovators.



2. Prof. Sanjay Kumar delivered a keynote speech on The topic of Communication Technology Paradigms during International Conference on VLSI, Signal Processing and Communications (ICVSComs 2025) in online mode at Vignan's Foundation for Science, Technology & Research University, Guntur AP.

3. Dr. Richa Mishra, Co-Convener, IIC-BIT, delivered a keynote address in a seminar on “Accelerators/Incubation – Opportunities for Students & Faculties – Early-Stage Entrepreneurs” at BIT Mesra on 28 August 2025. The session emphasized incubation support, accelerator programs, and pathways for fostering innovation and entrepreneurship within the institute.



INVITED TALKS DELIVERED BY FACULTY MEMBERS

4. Dr. Richa Mishra, BIT Mesra, served as a Resource Speaker in the SERB-sponsored two-day workshop on “Biosensors” held at the Department of Biomedical Engineering, CEG Campus, Anna University, Chennai, on 16–17 October 2025.

5. Dr. Richa Mishra, , delivered a keynote lecture on IIC-BIT sponsored Innovation and outreach at Lady K.C. Memorial School, Ranchi, on 12 December 2025. She shared insights on her product development journey.



6. Dr. Kalyan Koley served as Keynote Speaker for ANRF Sponsored Hands-on CAD Workshop: Mastering Device and Circuit Simulations, from 28th July to 01st August 2025 at Indian Institute of Information Technology (IIIT), Dharwad

7. Dr. Neela Chattoraj delivered lecture as Resource Person for UGC Malaviya Mission Teacher Training centre (MMTTC) short course in Artificial Intelligence from 10.09.2025 to 16.09.2025 on online mode at Ranchi University ,Ranchi

OUTREACH ACTIVITIES OF THE FACULTY MEMBERS

1. Dr. Kalyan Koley served as Resource Person for Malaviya Mission Teacher Training Programme from 11th December to 22nd December 2025, at Indian Institute of Technology (Indian School of Mines), Dhanbad on topic "Advanced CMOS Circuit Designing with Hands on Sessions"
2. Dr. G. K. Mishra Visited Arka Jain University, Mohanpur Gamaharia as Esteemed Guest on the occasion of student induction cum orientation program AARAMBH 2025 on 25.08.2025 organized for 1st year B.Tech and M.Tech students, and also on 7th Nov 2025 on the occasion of Technica 5.0 the annual technical fest.



3. Dr. Gajendra Kant Mishra was the invited Jury member for "Business Plan Competition-25" organized by Institution's Innovation Council (IIC-BIT Mesra), in association with Finance Club (FC) & Entrepreneurship Development Cell (EDC) and the Capacity Development & Skills Enhancement on 15th Nov 2025. The event was a Pre-Qualifier event to flagship annual event 'BIT-NISHAN'25 to be organized on 15th Jan 2026 (tentative date) under Institution's Innovation Council BIT Mesra.



OUTREACH ACTIVITIES OF THE FACULTY MEMBERS

4. A batch of 50 officer trainees from the Central Reserve Police Force (CRPF) had visited the Departments of Computer Science and Engineering (CSE), Electronics and Communication Engineering (ECE) and Electrical Engineering Department (EEE) on 25th Nov'25. The Dr. Gajendra Kant Mishra has coordinated the activity on behalf of ECE dept and elucidated the principal and working of Antenna



5. Dr. Neela Chatteraj served as Session Chair in international Conference on “Recent Trends in Intelligent Computing ,Manufacturing and Electronics (5-7th December 2025)at National Institute of Advanced Manufacturing Technology, (NIAMT)Hatia,Ranchi

6. Dr. Priyank Saxena served as a judge for the Inter-House Robotics Competition themed “Eco-Friendly Robotics,” held as part of the three-day summit Srijan, organised by Delhi Public School, Bokaro, on October 16, 2025.



7. Dr. Priyank Saxena served as an expert speaker in a live session on Akashvani (All India Radio) aired on August 22 at 4:00 PM, wherein he shared perspectives on the current trends, challenges, and future directions of Machine Learning.

OUTREACH ACTIVITIES OF THE FACULTY MEMBERS

8. Dr. Sanjeet Kumar was invited as a Jury member for state level competition under Inspire Awards-MANAK Scheme 2025 on Dec 19th 2025 organized by NIF-India (DST) and State Education Dept. (Jharkhand)



9. Dr. Sanjeet Kumar has conducted a mentorship workshop on Dec 20th 2025 as an expert for selected students for Nation level under Inspire Awards-MANAK Scheme 2025, sponsored by NIF-India (DST) and State Education Dept. (Jharkhand)



10. An article published in Prabhat Khabar on 01 December 2025 (Page No. 02) reported on the growing use of smart health devices in patient care. The publication specifically acknowledged the research and practical contributions of Dr. Richa Mishra, whose work in the field of smart healthcare technologies has supported safer, more efficient, and patient-centric treatment approaches.



OUTREACH ACTIVITIES OF THE FACULTY MEMBERS

11. Dr. Richa Mishra served as judge for the event for technical Exhibition / Poster Presentation / Contributed Talk under the theme "MATRIX" of symposium — the National Symposium on Mathematical Innovations for Industrial Advancement (NSMIIA 2025) organised by Department of Mathematics, Birla Institute of Technology, Mesra, Ranchi (9th August – 10th August 2025).



12. Dr. Richa Mishra, Assistant Professor, BIT Mesra (Ranchi), has been inducted as an Individual Member (Senior category) of the Indian National Academy of Engineering (INAE).



13. Dr. Richa Mishra attended an interaction meeting with Prof. Singam Jayanthu, Member, APEX Committee of CIL R&D Board (Ministry of Coal), NIT Rourkela, on 23 September 2025. The meeting focused on discussions related to research initiatives, collaboration opportunities, and R&D priorities in the coal and energy sectors.

14. Dr. Richa Mishra was featured in a special program aired on DD Jharkhand on 16 December 2025. During the program, she shared her 12-year journey of developing a microneedle-based product, highlighting the research, challenges, and innovations involved. Link to the video

https://youtu.be/SmVjhKm35_w?si=FBOx3rdujIIX9yFO



OUTREACH ACTIVITIES OF THE FACULTY MEMBERS

15. Dr. Sutapa Mandal, Dr. Neela Chatteraj and Dr. Richa Mishra interacted with DGM, CMPDI and visited 5G Use case Lab and Electronics section CMPDI on 21st November 2025.



16. Dr. Richa Mishra, was invited as Jury member for the CBSE Regional Science Exhibition at Sarala Birla Public School, Ranchi on 11th - 12th November 2025



AWARDS AND ACHIEVEMENTS

1. Dr. Gajendra Kant Mishra received the prestigious BIT Faculty appreciation award 'BITFAA' 25 by Hon'ble Vice Chancellor Prof. Indranil Manna, on 15th August 2025 for high quality publication for one of his works in IEEE IoT in the year 2024.



PhDs Awarded

Name and Roll No. of Student	Guide's Name	Date of Defence	Thesis Title
Monalisa Pandey PhD/EC/10052/2019	Dr. Aminul Islam	11th july 2025	Design and Analysis of Semiconductor Memory for Radiation Hardness.
Shwet Kashyap PhD/EC/10003/2021	Dr. N. Gupta	1st August 2025	Resource Allocation in Multi Beam Satellites using Machine Learning Techniques
Vishal H. Shah PhD/EC/10009/2019	Dr. P. P. Dash	23 rd August 2025	Development of Artificial Intelligence-based Techniques for Denoising Medical Images with Edge Preservation
Divya Sharma PhD/EC/10053/2020	Dr. V. Nath	31 st October 2025	Design of CMOS Instrumentation Amplifier using 180nm Technology for Space Applications



Congratulations

STAFF ACTIVITIES



Mr. Shubham Kumar's outstanding contribution helped the team secure a convincing 59-run victory in the BIT cricket league match on 29th November 2025.



Mr. Rajender contributed in the 45th Master Athletics competition held at Bengaluru.



STUDENT SECTION

STUDENT ACHIEVEMENTS

1. Two of the teams from Birla Institute of Technology Mesra made it to grand finale of the software edition of Smart India Hackathon. Dr. Vishal H Shah and Dr Anand Prasad Sinha were the mentors to the team. One of the team won the first prize, bringing laurels to the institute.



DOWN THE MEMORY LANE



Vikram Verma (BTECH/10161/21)

I completed my undergraduate studies in Electronics and Communication Engineering at BIT Mesra, where my enduring interest in semiconductors and circuit design was systematically nurtured. From excelling in the Analog and Digital Electronics Workshop during my first semester to qualifying GATE in my final semester, BIT Mesra provided a rigorous academic environment that strengthened my foundations in circuits and systems. Beyond academics, I had the opportunity to represent the institute on diverse platforms, including traveling for the Aerodesign Challenge, performing at Battle of Bands at various institutes, and securing Second Position at Smart India Hackathon 2023, making the journey both enriching and well-rounded. The institute also enabled interdisciplinary exploration through electives such as Remote Sensing and Aerospace Engineering, which significantly broadened my technical perspective and analytical thinking. These cumulative experiences led to my selection as a research intern at Northeastern University through the Immersive Summer Research Experience program, which subsequently evolved into a six-month research internship during my final year and ultimately culminated in my admission to a PhD program in Electrical Engineering, specializing in Energy-Efficient Circuits and Systems. I express my sincere gratitude to BIT Mesra and all my professors for their invaluable mentorship, guidance, and support, which have been instrumental in shaping my academic journey and professional growth.

DOWN THE MEMORY LANE



1.SUSANA KARNIK (2019 Batch)

I completed my B.Tech in Electronics and Communication Engineering from Birla Institute of Technology, Mesra and am currently pursuing an MBA at Indian Institute of Management, Kozhikode. After graduation, I gained professional experience working at PwC as a Technology Consultant in the Salesforce domain, where I was exposed to real-world business problems, client interactions, and cross-functional teamwork. This experience played a significant role in shaping my decision to pursue management education and deepen my understanding of strategy, leadership, and business decision-making.

My journey from engineering to industry and then to higher studies was shaped by continuous learning, strong faculty mentorship, and active participation in academic projects during my undergraduate years, which helped me build a solid foundation and gain clarity about my long-term goals.

To my juniors, I would encourage you to actively explore opportunities beyond academics, build practical skills, and seek guidance whenever needed. Consistency, self-belief, and mentorship play a crucial role in shaping your journey toward higher studies.

DOWN THE MEMORY LANE



Kumar Saurabh (2K25 Gold Medallist)

The four years I spent in college taught me a lot, both academically and personally. One of the most valuable things college gave me was true friends and companionship. Studying with friends made learning electronics interesting and enjoyable. We learned together, helped each other through doubts, and grew together, which made even challenging subjects easier to understand.

I started this journey with excitement—learning electronics while also building the skills needed for my future career. However, there came a phase when things didn't feel easy anymore. I faced self-doubt and felt underconfident at times. During the placement season especially, patience became very important. Instead of rushing or overthinking, I learned to stay calm, trust the process, and keep working. Being in touch with friends, family and discussing things whenever I was confused helped me a lot during this phase.

I have always believed in God, and these four years made me understand that whatever He does is for good. With time, everything started falling into place. I secured a decent placement, and towards the end of the journey, getting a Gold Medal felt really good. Looking back, I truly believe that consistency, patience, and self-belief make all the difference.

My message to juniors is simple—it's never too late. Believe in yourself, be patient, and don't hesitate to talk to others when you feel confused. Just start working, stay consistent, and trust that things will work out in the right time.

DOWN THE MEMORY LANE



Arihant Garg (2018 Batch) Joined MS , King's College London

STUDENT SECTION - INTERNSHIP EXPERIENCE



I, Rohit Suthar, a 2nd year student of Electronics and Communication Engineering, had the opportunity to undertake a one-month internship at the Indian Institute of Technology Madras in December 2025 under the Department of Mathematics, which proved to be one of the most meaningful and motivating experiences of my academic journey. During this period, I worked around "Fractal geometry and Fractal interpolation", an experience that allowed me to view data, mathematical patterns, and real-life signals from a new and deeper perspective.

Throughout the internship, I learned how complex patterns can be created from simple datasets. I explored how different types of functions and signals can be transformed into fractal forms. One of the most interesting parts of my learning was understanding how real-world signals, such as ECG, EEG, and seismic wave recordings, can be treated as one-dimensional signals and studied to observe hidden patterns and structures.

Two aspects of this internship had a strong impact on my learning. First, I developed a clear understanding of how fractal-based methods work in practice. Second, I learned how these ideas can be applied to real data, especially in signal analysis. This experience helped me improve my logical thinking, observation skills, and confidence in working with mathematical ideas in a practical way.

Apart from academics, the environment and ecosystem at IIT Madras made this experience even more special. The campus atmosphere was peaceful, inspiring, and full of learning opportunities. The research scholars were supportive and encouraged curiosity, independent thinking, and open discussions.

Overall, this internship contributed greatly to my personal and academic growth. The skills and exposure I gained have strengthened my interest in applied mathematics and research-based learning. I am grateful for this experience at IIT Madras, and I look forward to exploring more such learning opportunities in the future.



Contact us at ece-expeditions@bitmesra.ac.in