



# **ELECTRONICS & COMMUNICATION ENGINEERING DEPARTMENTAL NEWSLETTER**

**AUTUMN 2023, VOL-1 ; NO-2**

National Institute of Technology Srinagar  
Srinagar, Jammu and Kashmir 190006

# About **ECE** Department



ECE Department Building

The Department of Electronics and Communication Engineering was established in 1984 and offers B.Tech Degree in Electronics and Communication Engineering, M.Tech Degree in (1) MicroElectronics (ME) and (2) Communication and Signal Processing (CSP). Department aims to produce quality professionals to compete globally and excel by carrying out basic and applied research in emerging areas by forging strong industry-institute interaction. The Department also offers the Doctoral programmes in the field of Biometrics, Communication, MicroElectronics, Signal/Image Processing, Machine learning, Network security and VLSI Design. The Department is equipped with contemporary laboratory equipments required for the excellent growth of students. The Department has state of art laboratory including VLSI Lab, Optical fiber Communication Lab, Image Processing Lab, Information and Network Security Lab, Biometric Lab and machine learning Lab. Dr. Gausia Qazi is the Present Head of Department. The real strength of the Department lies in its qualified, dedicated and motivated faculty.

Jul 2023 - Dec 2023





Once again, I extend my sincere congratulations to the Department on the launch of this Newsletter. I wish the ECE Department continued success in its pursuit of excellence in education, research, and innovation.

**Dr. Gausia Qazi**  
HOD ECE Dept.

Once again, I extend my sincere congratulations to the Department on the launch of this edition of Newsletter. I wish the ECE Department meets continued success in its pursuit of excellence in education, research, and innovation.



# Mission, Vision & PEOs of the Department

## Vision of the Department

- To contribute to nation and the world by developing a high quality human and technological resource through excellence in the field of Electronics and Communication Engineering and research.

## Program Educational Objectives (PEOs)

- To impart analytic and thinking skills to develop initiatives and innovative ideas for R&D, Industry and societal requirements.
- To understand the facets of advanced technologies, processes and materials necessary in the engineering field.
- To provide sound theoretical and practical knowledge of E&C Engineering, managerial and entrepreneurial skills to enable students to contribute to sustenance of society with a global outlook.
- To inculcate qualities of teamwork, good social, interpersonal and leadership skills and an ability to adapt to evolving professional environments in the domains of engineering and technology.
- To appreciate the significance of collaborations in designing, planning, and implementing solutions for practical problems and facilitate the networking with national research and academic organizations.

## Mission of the Department

- To generate new knowledge by engaging in cutting edge research.
- To impart quality teaching-learning-experience with state of the art curriculum.
- To increase the visibility of academic programs globally and attract talent at all levels.
- To undertake collaborative projects which offer opportunities for long term interaction with academia and industry.
- Sustained interaction with the alumni, students, parents, faculty and other stake holders to stay relevant in the globalized environment.
- To develop human potential to its fullest extent so that intellectually capable and imaginative gifted leaders can emerge in a range of professions.

# Faculties



**Prof. Ajaz Hussain Mir**  
(HAG and Professor)

Area of interest: Image Processing, Security; Networks



**Er. Aijaz Ahmad Mir**  
(Associate Professor)

Area of interest: Image Processing, MIS



**Dr. Gausia Qazi**  
(Associate Professor)

Area of interest: Optical Fibre Communication Systems, Opto-Electronic Devices, RF Communication Systems



**Dr. Gh. Rasool Begh**  
(Associate Professor)

Area of interest: Cognitive Radio, Cooperative Communications, Error Control Coding, Full Duplex Communications, UAV



**Dr. Shahid Mehraj Shah**  
(Assistant Professor)

Area of interest: Information Theory, Wireless Communication, Machine Learning, Game Theory, Physical Layer Security, Cyber Physical Systems



**Prof. Najeeb-ud-Din**  
(Professor)

Area of interest: Device Modelling, VLSI, MicroElectronics



**Dr. Farida Khursheed**  
(Associate Professor)

Area of interest: Digital Image Processing, Image Security, Network and Cloud Security, Biometrics, Computer Vision, Medical Imaging, Deep Learning, Natural Language Processing.



**Er. Abdul Gaffar Mir**  
(Associate Professor)

Area of interest: Analog/ Digital Electronics, Computer and Network Security, Image Processing



**Dr. Sheikh Aamir Ahsan**  
(Assistant Professor)

Area of interest: RF Characterization, Compact modeling for Industry standardization, GaN HEMTs, 2D-Material-FETs, CMOS, Machine Learning for Semiconductor Research



**Dr. Omkar Singh**  
(Assistant Professor)

Area of interest: Digital Signal Processing, Biomedical Signal Processing, Wavelets and Filter Banks, Adaptive Filters







**Dr. Amandeep Singh**  
(Assistant Professor)

Area of interest: NanoElectronics and VLSI Design: Semiconductor device modelling and circuit simulation using SPICE models, Novel Semiconductor Devices



**Dr. Burhan Khurshid**  
(Assistant Professor)

Area of interest: VLSI Signal Processing Architectures, Architectural Design of Digital Systems, FPGA based design



**Dr. Brajendra Singh Sengar**  
(Assistant Professor)

Area of interest: Simulation Study of Semiconductor Devices, Fabrication of Semiconductor Devices, Thin Film Solar Cells, Application of Machine learning in Semiconductor based devices



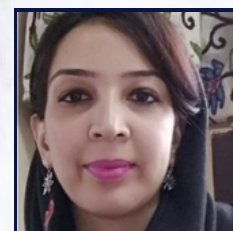
**Dr. Ashok Kumar**  
(Assistant Professor)

Area of interest: Analog VLSI Circuits: Voltage, Current and Mixed-Mode, MOS and Bipolar Analog Circuit Design, MicroElectronics Devices



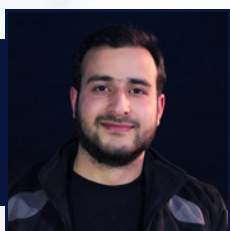
**Dr. Amit Kumar**  
(Assistant Professor)

Area of interest: Mutual Coupling Reduction, MIMO Antennas, UWB-MIMO Antennas, CP Antennas, mm-wave Antennas, Metamaterials, Antipodal Vivaldi Antenna, Rectenna, Massive MIMO



**Dr. Yusra Banday**  
(Assistant Professor - Contract)

Area of interest: Millimeter wave Communication



**Dr. Shoaib Amin Banday**  
(Assistant Professor - Contract)

Area of interest: Medical Image Analysis, Machine Learning for Healthcare Assistive Systems, Image Security



**Dr. Umer Ashraf**  
(Assistant Professor - Contract)

Area of interest: Wireless Communication



**Dr. Pankaj Kumar Sharma**  
(Assistant Professor - Contract)

Area of interest: MicroElectronics and VLSI Design, Current Mode Circuit, Mem-elements (Memristor, Memcapacitor, Meminductor) Emulator Design



**Dr. Aasif Mohammad Bhat**  
(Assistant Professor - Contract)

Area of interest: Advanced nano scale devices, Wide band gap materials (III-N) simulation, modelling and fabrication for high power, RF and biosensing applications.



# Papers, Books & Chapters published

Authors	Title of the papers	Conference/Journal, where published	Date of Publishing
Injila Mubarik, Gh. Rasool Begh	Outage probability and error rate analysis of full duplex relay in asymmetric fading channels	International Journal of Communication Systems (Wiley)	10/07/2023
M.S.Nazir, A.Pampori, R. Dangi, Sheikh Aamir Ahsan, Y.S. Chauhan	Charge-based Flicker Noise Modeling of GaN HEMTs down to Cryogenic Temperatures	IEEE Electron Device Letters (Q1) Vol. 44, no. 9, pp. 1416-1419, Sep. 2023	12/07/2023
Afshan A. Khan, Roohie N Mir, Najeeb-ud-din	Scheduling Strategies and Future Directions for NoC: A Systematic Literature Review	Springer Automatic Control and Computer Sciences, Vol. 57, No. 4, pp. 413 – 421, 2023, <a href="https://doi.org/10.3103/S0146411623040041">https://doi.org/10.3103/S0146411623040041</a>	01/08/2023
Umer Ashraf, Sumei Sun	Pathloss Measurement and Modeling for a Campus Block Environment at 2.1GHz and 3.45 GHz	IEEE VTS APWCS 2023	23/08/2023 to 25/08/2023
Umer Ashraf, Sumei Sun	Pathloss Measurements and Modeling at 3.45GHz for a Mixed Indoor/Outdoor Campus Environment	WIOPT-2023 Conference	25/08/2023 to 27/08/2023
Ajay Kumar Kushwaha, Ashok Kumar	First order filter based on DXMOCCII	8th International Conference on Computing in Engineering and Technology (ICCET 2023), (IET)	31/08/2023
Basharat Rashid, Majed Haddad, Shahid Mehraj Shah	Bayesian Game Formulation of Power Allocation in Multiple Access Wiretap Channel with Incomplete CSI	Accepted for presentation and publication in IEEE National Conference on Communication (NCC), IIT Madras. To be presented on Feb 28-Mar 02, 2024.	04/09/2023
Manjhi, Sarita, Gaurav Siddharth, S K Panday, Brajendra Singh Sengar, Praveen Dwivedi, Vivek Garg	Unveiling the Potential of Bismuth Oxy-Iodide (BiOI)-Based Photovoltaic Device for Indoor Light Harvesting	IEEE Transactions on Electron Devices	08/09/ 2023
Beenish Habib, Farida Khursheed	REST-API based DDoS Detection Using Random Forest Classifier in a Platform as a Service Cloud Environment.	International Journal of Computing and Digital Systems.	22/09/2023
Nida Ul Islam, Shahid Mehraj Shah	A low complexity binary-weighted energy disaggregation framework for residential electricity consumption	Elsevier Energy and Buildings, Q1, SCI Journal, Impact Factor: 6.7	22/09/2023
Ravula V. N. Sai, Swarna S. R. Reddy, Anjali Mantri, Brajendra S. Sengar, Vivek Garg	Effect of ETL, and MAPbBr <sub>3</sub> Quantum Dots at HTL/Absorber Interface on the Performance of (Sn,Ge) Based Perovskite Solar Cells	40th European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC 2023) organized by WIP Renewable Energies, Sylvensteinstr	23/09/2023
Sarita Manjhi, Nithin Chatterji, Brajendra S. Sengar, Vivek Garg	Optimization of BiOI/HTL Heterojunction for Efficient Charge Extraction from Solar Cell: For Indoor Light Harvesting	40th European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC 2023) organized by WIP Renewable Energies, Sylvensteinstr	23/09/2023
Haider Mehraj , A.H. Mir, Farkhanda	Multimodal biometric recognition using fused handcrafted features	Pollack Periodica	25/09/2023
Pankaj Kumar Sharma, Rajeev Kumar Ranjan	A Dual-Mode High-Frequency Grounded Memristor Emulator Circuit	27th International Symposium on VLSI Design and Test (VDATE-2023)	30/09/2023
Tamanna nazeer, Sheikh Aamir Ahsan	NITSRI-2D: A surface potential-based model for 2D material-based pH Sensitive FETs (Only paper from India in Europe's largest congregation)	IEEE European Solid State Device Research Conf. (ESSDERC), pp. 53-56, Lisbon, Portugal, Sep 2023	02/10/2023



# Papers, Books & Chapters published

Authors	Title of the papers	Conference/Journal, where published	Date of Publishing
Ashok Kumar, Ajay Kumar Kushwaha	Novel Current Mode FirstOrder Filter and Oscillator	Lecture Notes in Electrical Engineering book series (ICSTE2023)	03/10/2023
Romana Yousuf, Gausia Qazi	Design and numerical modeling of environmentally compatible HTL-free organic-inorganic perovskite solar cells.	Optik	17/10/2023
Haroon Yousuf Mir, Omkar Singh	Power-line interference and baseline wander elimination in ECG using VMD and EWT	Computer Methods in Biomechanics and Biomedical Engineering (Taylor & Francis)	27/10/2023
Inayat Hussain Wani, Amandeep Singh	Investigating the Impact of Intermediate Modulation Layer in RRAM on Multilevel Perceptron Performance	2023 IEEE Silchar Subsection Conference (SILCON)	03/11/2023
Shaiqa Nasreen, A.H. Mir	Cloud forensics: A centralized cloud provenance investigation system using MECC	Concurrency and computation Practice and Experience	08/11/2023
Haroon Yousuf Mir, Omkar Singh	VMD Based Powerline Interference Cancellation in ECG Signals	2023 Twelfth IEEE International Conference on Image Processing Theory, Tools and Applications (IPTA) 16-19 October 2023 Paris, France	21/11/2023
Taban Qayoom, Najeeb-ud -din	Multi-Analyte Hybrid Plasmonic Dual Grating Biosensor heterostructured by convexing slit width geometrical corrugation and its potentiality for noninvasive salivary glucose monitoring	Springer Journal of Optical and Quantum Electronics, Vol. 56, 78 <a href="https://doi.org/10.1007/s11082-023-05671-2">https://doi.org/10.1007/s11082-023-05671-2</a>	02/12/2023
Beenish Habib, Farida Khursheed	Time-Based DDoS Attack Detection through Hybrid LSTM-CNN Model Architectures: An Investigation of Many-to-One and Many-to-Many Approaches	Concurrency and Computation: Practice and Experience	04/12/2023
Pankaj Kumar Sharma, Rajeev Kumar Ranjan, Sung-Mo Kang	A Compact Electronically Tunable Meminductor Emulator Model and Its Application	IEEE Circuits and Systems Magazine	07/12/2023
Haroon Yousuf Mir, Omkar Singh	Powerline interference reduction in ECG signals using adaptive notch filter designed via Variational mode decomposition	Analog Integrated Circuits and Signal Processing (Springer)	15/12/2023
Salman yousuf, Ranjeet Rout, Shahid Mehraj Shah	Deep ResNet Based Classification of Long Tailed Data with Renyi Entropy as Loss Function	Accepted for presentation and publication in fifth International Conference on Computing and Network Communications (CoCoNet'23), Bangalore, India	18/12/2023 to 20/12/2023
Shahid Mehraj Shah, Faraz, MZA Khan, Majed Hadad	Deep Neural Network based secure-energy efficient power allocation in an Interference Network	Accepted for presentation and publication in fifth International Conference on Computing and Network Communications (CoCoNet'23), Bangalore, India	18/12/2023 to 20/12/2023
Amandeep Singh	Low power Circuit Design Using Dynamic GDI Technique in CNTFET Technology	18th ACM International Symposium on Nanoscale Architectures	20/12/2023
Adil, Asrar, Najam Us Saqib, Shahid Mehraj Shah	Achievable Rates for Finite Alphabet Constellation Over Non-Gaussian Noise Channel	Accepted for presentation and publication in International Conference on 6G Communications Networking and Signal Processing, Singapore. Paper will be presented on Dec 27-30, 2024 in NTU Singapore.	27/12/2023 to 30/12/2023

# Sponsored Projects Ongoing / Awarded

Title of the Project	Investigator(s)	Sponsoring Agency	Amount (in INR)
ISEA - II	Prof. A H Mir, Dr. Farida Khursheed	MeiTy	36.06 Lakhs
JKSTIC (DST)	Dr. Farida Khurshed	JK Govt	7.2 Lakhs
JKSTIC (DST)	Dr. Farida Khursheed, Dr. Zamrooda Jabeen, Dr. Mehraj Ahmad Lone	JK Govt	7.1 Lakhs
JKSTIC	Prof. A H Mir	Ministry of science and technology, Department of Science and Technology	7.1 Lakhs
JKSTIC	Prof. A H Mir	Ministry of science and technology, Department of Science and Technology	7.2 Lakhs
Investigation of Non-ideality Factors for a P3HT: PCBM Based Bulk Hetero-junction Organic Solar Cell in Presence of Gold Nanoparticles	Prof. Najeeb ud din	CRG SERB, Department of Science & Technology,	51.14 Lakhs
Design and development of Low memory Discrete Transform for Low Cost IoMT Devices	Dr. Burhan Khurshid (PI), Dr. Mohammad Rafi (Co-PI), Dr. Tawseef Ayub Sheikh (Co-PI)	JKST&IC, DST J&K	4.99 Lakhs
Design and Implementation of 5G MIMO/Array Antenna with Spatial Diversity and Beamforming	Dr. Amit Kumar (PI) No Co-PI	EMEQ Scheme under DST-SERB Approval letter on 1st Dec. 2023	30 Lakhs Approx. (Sanctioned letter not issued yet)
Architectural and Technology-dependent optimization of DSP Filters for FPGA based Image Processing applications	PI: Dr. Gh Rasool Begh Co-PI: Dr. Burhan Khurshid	JK DST	12 Lakhs (Approved but sanctioned amount has not been conveyed yet)
Design and Development of Non-Intrusive Load monitoring framework using Smart Meter Data Analysis	Dr. Shahid Mehraj Shah	J&K Science, Technology and Innovation Council, Dept. of Science & Technology	1.2 Lakhs (Received the approval information, actual budget yet to be allocated.)
Development and Augmentation of the Industry Standard ASM-GaN-HEMT Model for State-of-the-art Integrated Circuit Design	Dr. Sheikh Aamir Ahsan	Startup Research Grant (Early Career Research Award) (Science and Engineering Research Board)	30 Lakhs
A novel method for minimization of false alarms in medical units	Dr Omkar Singh	J&K Science, Technology and Innovation Council, Dept. of Science & Technology	3.3 Lakhs approved as first installment
Investigation of Electrical Parameters in Organic Solar Cells due to Incorporation of Metallic Nano Particles	Prof. Najeeb-Ud- Din	JKST&IC	7.2 Lakhs
Design and Investigation of Materials of Use in PSC to obtain Optimum Performance Parameters.	Dr. Gausia Qazi	JKST&IC	7.3 Lakhs
Architectural & Technology- Dependent Optimization of DSP Filters for FPGA based Image Processing Applications	Dr. Gh. Rasool Beigh	JKST&IC	6.6 Lakhs
Design and Development of Non- Intrusive Load Monitoring Framework using Smart Meter Data Analysis	Dr. Shahid Mehraj Shah	JKST&IC	7.8 Lakhs
A Novel Method for Minimization of False Alarms in Medical Units	Dr. Omkar Singh	JKST&IC	6.6 Lakhs
Development of Tunable Band Gap Perovskite Materials for Photovoltaic Applications	Dr. Brajendra Singh Sengar	JKST&IC	6.6 Lakhs

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# Details of Patents Applied/Received

Title of the Patent	Inventor(s)	Status	Details
Optimized physical parameter set for a 1550 nm DFB laser source with enhanced modulation characteristics, reduced source linewidth and chirping and suppressed harmonic and inter modulation distortion for CATV frequency band of operation.	Gausia Qazi Hakim Najeeb-ud-din	Granted on 21-10-2023	Patent No: 461319 Application No: 201811015231
Design and Performance investigation of 0.7 mm Pentacene based Organic Thin Film Transistors	Farkhanda Ana Najeeb-ud-din	Granted on 17-11-2023	Patent No: 470215 Application No: 201811011033
Self timed Comparator Based Power Efficient High Speed Analog to Digital Converter	Liyaqat Nazir, R. N. Mir, and Najeeb-ud-din	Granted on 06-07-2023	Patent No: 400945 Application No: 201611009467
A Knee cap device	Khadim Adil Hussain Mir, Syed Kashif Jeelani Alvi, Burhan Khurshid, Serhaun Jan, Zeenat Mukhtar, Aasif Bashir Bhat.	Applied for	Application No: 2023110074933A

## Testing & Consultancy

Title of the Project	Investigator(s)	Consultancy rendered	Amount Earned
Alternative Technological measure for handling of Parcels at Parcel Hub Srinagar	Prof. M. F. Wani, Dr. Shahid Mehraj Shah, Dr. Janib Ul Bashir, Dr. Noor Muhammad, Dr. Ahsan Chishti, Dr. Aabid Bazaz	Postal Services (Mail), Jammu & Kashmir Circle	Actual amount not yet decided.

## PhD Degrees Awarded

Name of Scholar	Name of Supervisor	Topic/Area of Research
Suhail Ahmed	Prof. A H Mir	Enhancing Reliability and Security in Software Defined Networks
Mursal Ayub Hamdani	Dr. Gausia qazi	Design and analysis of a novel common mirror structure based photonic integrated Michelson interferometer and modulator
Ifrah Amin	Dr. Gausia qazi	Numerical investigations of gain enhanced ASE re-injected EDFA with RFA pump actuated spectrum slope gradient tailoring in ultra-dense WDM environment
Malik Mubasher Hassan	Prof. G.M. Rather	Study of Reliable Relay Assisted Free Space Optical Communication (FSOC) for Future Networks
Bisma Bukhari	Prof. G.M. Rather	Compact Microstrip (Patch) Antennas for Modern Wireless Applications
Aejaz Farooq Ganai	Dr. Farida Khursheed	Towards Automatic Recognition of Unconstrained Handwritten Urdu Script using Deep Learning
Aaqib Hassan Bulla	Dr. Shahid Mehraj Shah	Performance Analysis of Energy Efficient Wireless Communication Technologies for 5G and 6G

- 9 PhD Thesis are under Submission in the Department.
- A Total of 42 Doctoral Programs are ongoing in the Department.



# Conferences, Courses & Trainings Attended / Conducted

Name of the Faculty	Name of the program Attended	Institute/Place	Dates
Dr. Amit Kumar	Fundamental Glossary of Electronics (English-Hindi Kashmiri)	Department of E&IT, University of Kashmir	03/07/2023 to 07/07/2023
Dr. Omkar Singh	Subject Expert in Expert Advisory Committee (EAC) Meeting cum Workshop for the evolution of "Fundamental Glossary of Electronics (English-Hindi Kashmiri)" held by the Commission for Scientific and Technical Terminology (CSTT), Govt of India	Department of E&IT, University of Kashmir	03/07/2023 to 07/07/2023
Dr. Sheikh Aamir Ahsan	IEEE European Solid State Device Research Conference	Lisbon, Portugal	11/09/2023 to 14/09/2023
Dr. Amit Kumar	International Conference on Sustainable Emerging Innovations in Engineering and Technology 2023 (ICSEIET)	ABESEC Ghaziabad, India (But attended in Hybrid Mode)	14/09/2023 to 15/09/2023
Dr. Brajendra Singh Sengar	40th European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC 2023) organized by WIP Renewable Energies, Sylvensteinstr	Lisbon, Portugal	18/09/2023 to 22/09/2023
Dr. Gausia Qazi	Silicon Photonics Design, Fabrication, Experimentation and Data Analysis.	University of British Columbia (Online)	19/09/2023 to 13/12/2023
Dr. Burhan Khurshid	One week workshop on "VLSI Architectures for Image and Video Processing," organized by IIITD&M, Kancheepuram	Online mode	04/12/2023 to 08/12/2023
Dr. Shahid Mehraj Shah	Fifth International Conference on Computing and Network Communications (CoCoNet'23), Bangalore, India	PES University, Bangalore, India	18/12/2023 to 20/12/2023
Dr. Shahid Mehraj Shah	International Conference on 6G Communications Networking and Signal Processing, Singapore	NTU Singapore.	27/12/2023 to 31/12/2023
Dr. Pankaj Kumar Sharma	27th International Symposium on VLSI Design and Test (VDAT-2023)	BITS Pilani, Pilani Campus	29/09/2023 to 01/10/2023
Dr Omkar Singh	International Conference on Image Processing Theory, Tools & Applications	Paris, France	16/10/2023 to 19/10/2023

Co-Ordinator	Name of the program Conducted	Sponsoring Agency	Dates
Dr. Shahid Mehraj Shah	5G Testbed at IISC ( By Prof. Chandra Murthy, IISc Bangalore)	Dept. of ECE	31-07-2023 to 01-08-2023

## Purchases Undertaken

Name of the Faculty	Name of the equipment/Item	Quantity	Date of Purchase	Amount of Purchase
Prof. A.H. Mir, Dr. Farida khursheed	Smart Board Panel (ISEA)	01	05/10/2023	Rs. 1,19,999
Prof. A.H. Mir, Dr. Farida khursheed	Laptops (ISEA)	02	16/11/2023	Rs. 1,19,460
Dr. Farida khursheed	Laptop (JKSTIC)	01	12/09/2023	Rs. 86,767
Dr. Farida khursheed	Printer (JKSTIC)	01	08/11/2023	Rs. 24,500

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Being committed to academic excellence, as part of the course curriculum revision, we hope to introduce new courses that equip our students with industry-relevant skills in advanced semiconductor technologies, circuits, and Communication systems. To supplement the hands-on experience, we plan to conduct some industry-relevant short-term courses in different Departmental specializations for undergrad and grad-level students and research enthusiasts. The Department also plans to establish student and professional society chapters to facilitate seminars and distinguished lectures, especially in the IEEE Electron Devices Society, Circuits and Systems Society, Microwave Theory and Techniques Society, and the Optical Society of America, aimed at giving our students a global perspective.

The Department is actively engaged in research themes in semiconductor devices, circuits, signal processing, and Communication engineering, with several sponsored research projects being undertaken by our faculty members spanning these areas. Along these lines, we aim to increase research collaborations with national and international academic and industrial groups to ensure a qualitative and quantitative increase in our scientific production. We also stand committed to sustainability and green technologies; as such, our long-term goal is to establish interdisciplinary centers of excellence that address global energy and climate-related problems. To give our institute community a flavor for our research, we hope to conduct a research day where our faculty and scholars will showcase their research.

With the inception of new labs—such as the Machine Learning Lab, Advanced Communication Lab, and Communication Control & Learning Lab—our Department is delving into cutting-edge research areas like Artificial Intelligence, Machine Learning, 5G & Beyond, and Cyber-Physical Systems. Plans involve establishing a next-gen Communication system testbed for developing and testing emerging technologies. Collaborations with institutions like IIT Hyderabad, IISER Bhopal, IISc Bangalore, and the University of Avignon in France are expanding our research horizons. Students across all academic levels (BTech, MTech, and PhD) actively contribute to these collaborations, enriching our commitment to innovation and global knowledge exchange. The curriculum of UG and PG programs is constantly being updated to impart the necessary skills, enabling students to work in these cutting-edge areas.

To facilitate a seamless learning experience, we are investing in state-of-the-art infrastructure. New software license bundles are planned for procurement to provide students with a platform to bring theoretical learning into practice. In line with our commitment to align academic learning with industry needs, we are establishing strategic partnerships with organizations such as SCL Chandigarh, Keysight Technologies, Ingain Technologies, and AMPICQ, and we hope to have more such industrial engagements in the future. These collaborations will open up avenues for internships, workshops, and real-world projects, enhancing our students' readiness for the professional world.

As we look ahead, we envision an ECE Department that excels in academic and research pursuits and nurtures individuals ready to face the challenges of a dynamic and evolving technological landscape.

**Dr. Shahid Mehraj Shah**  
**Assistant Professor**

# Major Activities



## Editorial Board

**Editor-in-Chief**

: Dr. Gausia Qazi

**Co-Editors**

: Mr. Pinak Pani Dixit, Mr. Mohammad Saif

**Correspondents**

: Mr. Shiva Dwivedi, Mr. Teja Kodiya

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: Er. Mohammad Sibgat ullah