

Department of Electrical and Electronics Engineering (EEE)



BITS Pilani

Hyderabad Campus

Department of Electrical and Electronics Engineering

RESEARCH@EEE.BITSPILANI.HYDERABADCAMPUS

Research details: <https://eee.bits-hyderabad.ac.in/>

Department at a Glance

The vision of the EEE department is to be a beacon of excellence in electrical and electronic engineering education, research, and innovation, nurturing the next generation of skilled engineers, innovators, entrepreneurs and making significant contributions to technological advancements and societal development and attracts the best students and staff.

The mission of the department is to provide a dynamic and stimulating learning environment that fosters creativity, critical thinking, and problem-solving skills among its students. It aims to empower students with a strong foundation in electrical and electronic principles, coupled with practical hands-on experience using state-of-the-art equipment and technology.

- **2008:** Established with UG programs of EEE and ECE & **PhD program**
- **2009:** ME in Embedded Systems and Microelectronics
- **2012:** FD Program in Electronics & Instrumentation (INSTR)
- **2015:** ME in Communication Systems

FACULTY

Senior Professor	:	01
Professor	:	06
Associate Professor	:	07
Assistant Professor	:	18
Adjunct Professor	:	02
Total	:	32

The department have over 31,040 sq. ft. of lab space catering to the need of 49 labs for UG, PG and PhD students with state-of-the-art infrastructures to provide the students with a quality learning experience. There are 13 expert lab technicians well equipped to maintain the labs.

Ph.D. Programs and Benefits

Full-Time(FT)

On-campus research with academic exposure and fellowship

Part-Time(PT)

Off-campus research at the workplace on problems relevant to the department.

Aspirant Scheme

Off-campus research at the work place on problems relevant to the student's work environment. Admission to the aspirant scheme is open throughout the year.

Benefits

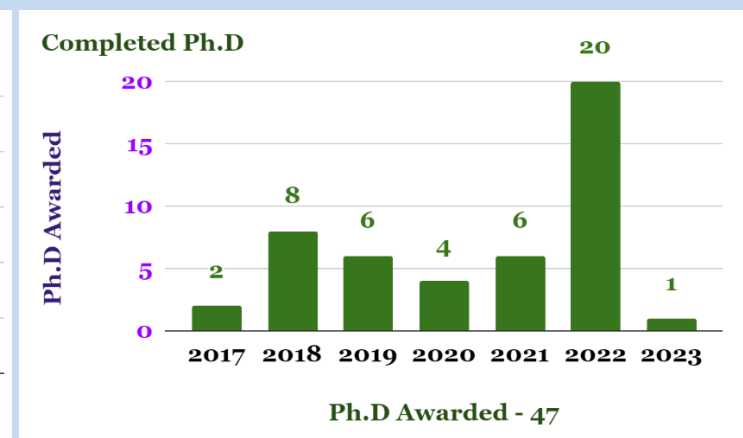
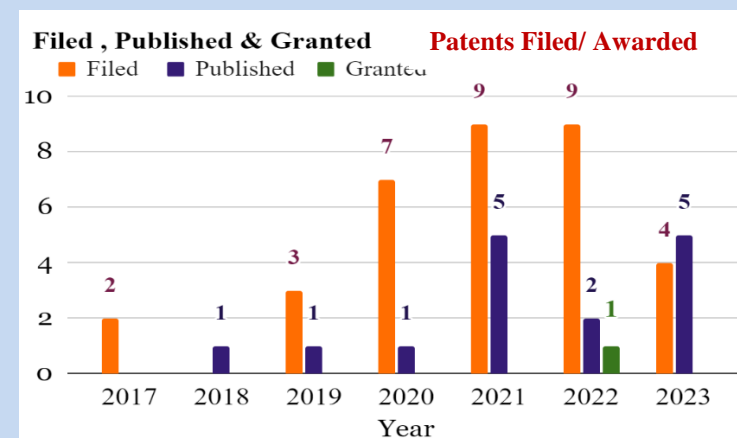
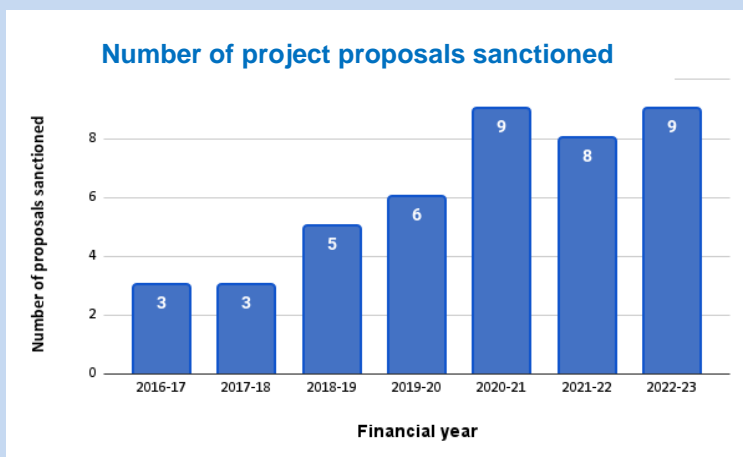
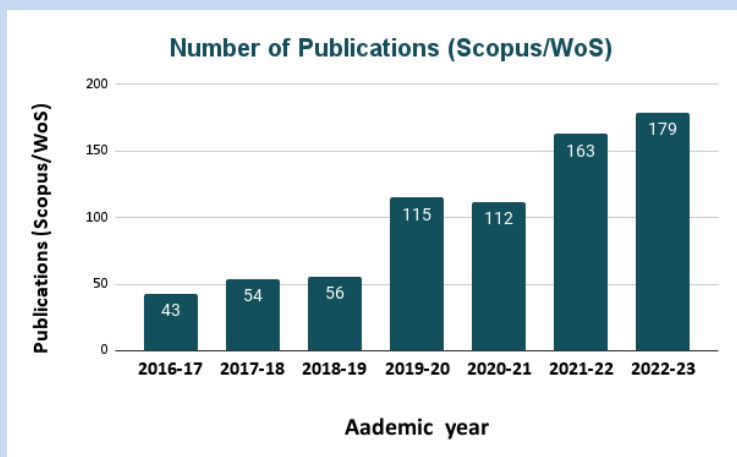
- Diverse research areas
- Exposure to research of national / international importance
- Opportunity for startups and entrepreneurship
- Fellowship of INR 31,000-35,000p.m for FT students
- Travel Grant and Contingency
- On-campus hostel facility

LAST DATE TO APPLY:

Deadline to receive filled applications with the prescribed application fee is 17:00 hrs. on June 26th 2023.

Click on "online application" at <https://www.bitsadmission.com/phdmain.aspx>

Research output of the Department



Post-Ph.D. position of selected students

Name of the Student	Organization	Position
VedaBhanu Pemberthi	Advanced Micro Devices (AMD), Hyderabad.	Silicon Design Engineer-II
Samit Kumar Ghosh	Khalifa University, Abu Dhabi, UAE	Post-doc fellow
Nawin Ra	VIT, Chennai Campus	Assistant Professor
SohanDudala	Cleome Innovations & BioCyTiH Foundation, MMNE Lab, India	Director & Postdoc
Jayapiriya U S	University of Bath, UK	Post doc fellow
Sangam Srikanth	IMEC, Belgium	R&D Engineer
J Murali Mohan	Okinawa Institute of Science and Technology (OIST), Japan	Post-doc fellow
Renuka H	Carnegie Mellon University, USA	Post-doc fellow
Sanjay Vidhyadharan	EEE-WILP, BITS-Pilani	Assistant Professor
JayeshGanji	Andhra Electronics Ltd., Bangalore, India	Senior RF Engineer

** Many other scholars are working in Reputed Institutes / Industries

PhD Eligibility Criteria, Selection Process, Research Area etc.

Eligibility Criteria

Minimum academic record of 60% marks or 6/10 CGPA in the following

- Higher degree(M.E/M.Tech.) in relevant area(both Full-time and Part-time schemes)
- First degree(BE/B Tech in Electrical/Electronics/Instrumentation and allied areas of Engineering
- M.Sc.in Electronics/Physics (for Full-time candidates only).

Selection Criteria:

Shortlisted candidates will be called for written test/interview at Hyderabad Campus. Candidates with Higher Degree (M.E./M.Tech.) as the highest qualification or those with National Fellowships like CSIR/DBT/UGC are exempted from the written test. Selected candidates with first degree (B.E/M.Sc Electronics/M.Sc. Physics) will undergo coursework for two semesters with minimum performance requirements.

Research Areas

Thrust areas	Area of Expertise	Openings*
Communication Systems and Networks (Including Digital Signal Processing)	LTE, 5G, 6G, Massive MIMO, Satellite communication, quantum communication, optical communication, wireless communication, Information theory, Coding Theory, MAC Layer, Radar, RF amplifier design, Speech signal processing, Machine Learning, Graph Theory, Biomedical Signal Processing and Modelling of Organic materials for solar cells, Biomedical signal and image processing	4
Electronic Materials and Devices	MEMS, Microfluidics, Smart sensors, Biosensors, Fuel Cell, Solar, Nanoelectronics, Wearable Devices, Cyber-Physical Systems, Photonics, Optical Communications, Photonic Integrated Circuits, Resistive memories, Device Simulation & Fabrication, Material Simulation, Gas/VOC Sensors	7
Embedded Systems	Hardware Software Co-design, Network Embedded Systems, Human Computer Interface (HCI) Interaction, Embedded Testing, Real Time Systems, Safety-Critical Embedded System Design, Device Drivers	2
Instrumentation and control	Biomedical instrumentation, Instrumentation and Control, IoT, Robotics & Automation	2
Microelectronics & VLSI (Analog & digital circuits and systems)	VLSI Arithmetic, VLSI Architecture; Digital VLSI Design, Embedded Systems, Analytical modeling for state-of-the-art VLSI, Network-on-Chip design, Application Specific Synthesis of NoC, Reconfigurable NoC, VLSI Arithmetic Circuits, Low Power VLSI Design	4
Power Systems, Power Electronics	Power system operations, Renewable Energy, FACTS, Power system stability, Power Quality, Power Electronics, Energy storage systems, Machine condition monitoring, Digital twins	5
Total Openings (Full-time)		24

*** Openings are tentative and will be filled subject to the availability of suitable candidates and final approval from the competent authority.**

For further details and FAQ, please refer to the [FAQ document link given below.](#)

<https://docs.google.com/document/d/1SsE08H67SacOpjklSi3BLLS6cKDwAnZGwZk4lB9EeKo/edit?usp=sharing>

RESEARCH ACTIVITIES OF FACULTY MEMBERS

Please click on the faculty name to learn more about his/her research interests.

Faculty : [Prof. S Gurunarayanan](#)
Designation : Senior Professor
Qualification : Ph.D. (BITS-Pilani)
Areas of Interest : Digital VLSI Design
Publications : Journals 20, Conferences 40



Faculty : [Prof. BVVSN Prabhakar Rao](#)
Designation : Professor
Qualification : Ph.D. (IIT Delhi)
Areas of Interest : Biomedical Signal / Image Processing
Publications : Journals-20, Conferences-10, Book Chapter-2



Faculty : [Dr. Sanket Goel](#) (Professor & Dean - SRCD),
Designation : Professor
Qualification : BS (H – Delhi University), MS (IIT Delhi), PhD (University of Alberta, Canada), Postdoctoral (Stanford University)
Areas of Interest : MEMS, Microfluidics, Nanoelectronics, Flexible, Printed and Wearable Electronics, Cyber-Physical Systems, Lab-on-a-chip, Point-of-Care devices, 3D printing, Fuel Cells, Smart sensors
Publications : 18 patents, 1 Book, > 300 articles (>203 Journal, 79 Conference, 18 book chapters), > 92 invited talks, Associate Editor (6 SCI Journals)



Faculty : [Prof. Subhendu Kumar Sahoo](#)
Designation : Professor
Qualification : Ph.D. (BITS-Pilani, Pilani Campus)
Areas of Interest : VLSI architecture for Digital Signal Processing
Publications : Journals - 24, Conference - 38



Faculty : [Dr. Alivelu Manga Parimi](#)
Designation : Associate Professor
Qualification : PhD (University Technology Petronas, Malaysia)
Areas of Interest : Renewable Energy Sources, Microgrids, FACTS devices, Power system stability, Power Quality, Reactive power compensation, Modal Analysis, Control Systems, Batteries, Implementation of ML Techniques.
Publications : Journals - 23, Conferences - 77, Book Chapter - 5



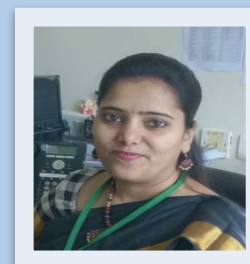
Faculty : [Prof. Prasant Kumar Pattnaik](#)
Designation : Associate Professor
Qualification : Ph.D (Indian Institute of Science, Bangalore)
Areas of Interest : Photonics, Optical Communications, Photonic Integrated Circuits,
Publications : Journals: 30, Conferences: 60, Book Chapters: 3, Patents: 5 (filed)



Faculty : [Dr. Venkateswaran Rajagopalan](#)
Designation : Associate Professor
Qualification : D.Eng (Cleveland State University, Cleveland, OH, USA)
Areas of Interest : Human brain mapping using Magnetic Resonance Imaging (MRI), Transcranial Magnetic Stimulation (TMS), Electroencephalography (EEG), Positron Emission Tomography (PET), Neurological disorders Amyotrophic Lateral Sclerosis (ALS), Multiple Sclerosis (MS), Brain Tumor, Machine Learning, Graph Theory (brain network analysis)
Publications : Journals– 28, Book Chapters – 2, Conferences – 24



Faculty : [Prof. Runa Kumari](#)
Designation : Associate Professor
Qualification : Ph.D (NIT-Rourkela)
Areas of Interest : Dielectric Resonator Antenna, Log periodic Antenna, Reconfigurable Antenna, Microstrip antenna, EBG, Metamaterial, Antenna Array.
Publications : Patent – 1, Journals-20, Conferences-36, Book-1, Book chapters-4



Faculty : [Dr. Sumit Kumar Chatterjee](#)
Designation : Assistant Professor
Qualification : Ph.D (IIT Kharagpur)
Areas of Interest: Digital VLSI Design, Video Compression.
Publications : 9 - Journals, 11 - Conference, 1 - Book



Faculty : [Dr. Soumya J](#)
Designation : Assistant Professor
Qualification : Ph.D (IIT-Kharagpur)
Areas of Interest: Network-on-Chip (NoC) design,
 Reconfigurable System design, Fault-Tolerant
 System Design, Real Time Systems,
 Verification.
Publications : Journals-14, Conferences- 27



Faculty : [Prof. Surya Shankar Dan](#)
Designation : Associate Professor
Qualification : Ph.D. (IISc Bangalore)
Areas of Interest: (1) Development of ML-based data-driven modeling of
 nanoelectronic devices for their circuit applications; (2)
 Development of physics-based compact analytical
 models for nanoelectronic devices and their circuit
 applications; (3) Design of ultra-low-power and high-
 performance analog, digital and ternary circuits at the
 state-of-the-art technology nodes; (4) Development of
 device and circuit simulators for SPICE applications.
Publications : 41 (21 journals, 5 book chapters and 15 conferences)



Faculty : [Dr. Mithun Mondal](#)
Designation : Assistant Professor
Qualification : Ph.D (IIT- Roorkee)
Areas of Interest: High Voltage Engineering, Condition
 Monitoring and Diagnostics of Transformers,
 High Voltage Engineering.
Publications : Journals - 9, Conferences - 9



Faculty : [Dr. Radhika Sudha](#)
Designation : Associate Professor
Qualification : Ph.D (Tokyo Polytechnic University, Tokyo, Japan)
Areas of Interest: Power Electronics, Machine Condition Monitoring,
 Pattern recognition, Renewable Energy, ANN, IoT,
 Smart Grids, Energy Storage Systems.
Publications : 48 publications



Faculty : [Dr. Harish V Dixit](#)
Designation : Assistant Professor
Qualification : Ph.D (VJTI)
Areas of Interest: Electromagnetics, Microwave and RF Engineering (High
 and Low Power), Multiphysics Analysis, Pulsed Power
 Technology
Publications : 11 journals and 16 conferences



Faculty : [Dr. Syed Ershad Ahmed](#)
Designation : Assistant Professor
Qualification : Ph.D. (BITS-Pilani)
Areas of Interest: VLSI Arithmetic Circuits, Low Power VLSI Design
Publications : Journals-12, Conferences-26, Book Chapters-2



Faculty : [Dr. Ponnalagu R N](#)
Designation : Assistant Professor
Qualification : Ph.D (IIT- Madras)
Areas of Interest: Sensors - Signal conditioning and Interfacing, Biomedical
 Instrumentation systems and Unmanned Aerial Vehicles
Publications : Journals - 14, Conferences – 11, Book Chapter - 3



Faculty : [Dr. Rajesh Kumar Tripathy](#)
Designation : Assistant Professor
Qualification : Ph.D (IIT Guwahati)
Areas of Interest : Digital Signal Processing, Time-Frequency analysis, Pattern recognition and Machine Learning, Deep Learning for Healthcare
Publications : 1-Patent, 65 Journal Papers, 12 Conference Papers, 2 Book.



Faculty : [Dr. Sayan Kanungo](#)
Designation : Assistant Professor
Qualification : Ph.D. (IEST-Shibpur)
Areas of Interest : Simulation, Design and Modelling, of post – CMOS Devices for Gas Sensing, Bio Sensing and Memory Applications, First Principal Calculation, Computational investigations on two dimensional(2D) materials for Gas Sensing, Photo Detection and Battery Applications.
Publications : 23 SCI Journals, 5 Book-chapter and 8 International Conferences



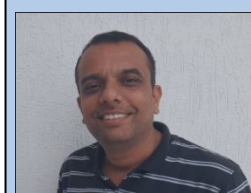
Faculty : [Dr. Chetan Kumar V](#)
Designation : Assistant Professor
Qualification : Ph.D. (BITS-Pilani)
Areas of Interest : Computer Arithmetic, CNFET based Multi-valued logic design, Design of reversible Arithmetic circuits
Publications : Journals-7, Conferences-26, Book Chapter-1



Faculty : [Dr. Parikshit Sahatiya](#)
Designation : Assistant Professor
Qualification : Ph.D (IIT Hyderabad)
Areas of Interest : Flexible and wearable electronics, 2D materials based electronics, broadband photodetectors, Flexible resistive memories, transient electronics, papertronics etc.
Publications : 60 Journals, 20 Conference, 3 Book Chapters and 1 patent filed



Faculty : [Dr. Prashant Wali](#)
Designation : Assistant Professor
Qualification : Ph.D (IIIT Bangalore)
Areas of Interest : Radio Resource Allocation, MAC Optimization, Packet Scheduling in 4G and Beyond Broadband Wireless Networks.
Publications : Journals – 7, Conferences – 10, Book Chapters – 1



Faculty : [Dr. Sourav Nandi](#)
Designation : Assistant Professor
Qualification : Ph.D (IIT Kharagpur)
Areas of Interest : Microstrip and Substrate Integrated Waveguide Antennas,
 Flexible Antennas, RF & Microwave Circuits
Publications : Journals – 13, Conferences - 4



Faculty : [Dr. Ankur Bhattacharjee](#)
Designation : Assistant Professor
Qualification : Ph.D (IEST, Shibpur)
Areas of Interest : Renewable Energy, Energy Storage, Hybrid Microgrids,
 Electric Vehicles, Battery Management Systems (BMS)
Publications : Journals-17 (SCI), Conferences–21, Book Chapters-6,
 Patent – 3 (Filed), 1 (Granted), Books - 1



Faculty : [Dr. STP Srinivas](#)
Designation : Assistant Professor, Gr - I
Qualification : Ph.D (IIT Madras)
Areas of Interest : Power System Analysis, Control, Optimization & Protection,
 Smart Protection Systems, Microgrids.
Publications : Journals - 7, Conferences - 6



Faculty : [Dr. Pratyush Chakraborty](#)
Designation : Assistant Professor
Qualification : Ph.D. (University of Florida, USA)
Areas of Interest : Game Theory, Power System, Renewable Integration,
 Control Theory, Cyber-Physical Systems
Publications : 9 Journals, 10 Conference Papers, 1 Book Chapter



Faculty : [Dr. Gopal Krishna Kamath M](#)
Designation : Assistant Professor
Qualification : Ph.D. & MS by Research (IIT Madras)
Areas of Interest : Control & Security of Cyber-Physical Systems, Intelligent
 Transportation Systems, Networked Control Systems,
 Safe Reinforcement Learning
Publications : Journals – 4, Conferences - 10



Faculty : [Dr. Subhradeep Pal](#)
Designation : Assistant Professor
Qualification : Ph.D (IIT- Patna)
Areas of Interest: Silicon Photonics, Optical Fiber Communications, Photonic Integrated Circuits, Photo Detectors, Memristors.
Publications : Journals - 16, Conferences – 11. Book Chapter -1



Faculty : [Dr. Amit Kumar Panda](#)
Designation : Assistant Professor
Qualification : Ph.D (IIT- Patna)
Areas of Interest: VLSI Architectural Design, VLSI for Cryptography, Hardware Security, FPGA based System Design
Publications : Journals - 04, Conferences – 9.



Faculty : [Dr. Joyjit Mukherjee](#)
Designation : Assistant Professor
Qualification : Ph.D. (IIT Delhi).
Areas of Interest: Control Theory, Robotics, Aerospace Control, Human-Robot Interaction, Digital Twins.
Publications : Books - 01, Journals - 07 , Conferences – 04.



Faculty : [Dr. Atri Mukhopadhyay](#)
Designation : Assistant Professor
Qualification : Ph. D. (IIT Kharagpur)
Areas of Interest: MAC protocol design and resource allocation in wireless-optical access networks, optical access networks, wireless networks and free space optical networks. Network Optimization and Game Theory
Publications : Journals - 14, Conferences - 15



For Further Information, Contact

Prof. Subhendu Kumar Sahoo

Head of the Department (H-222)

E-mail:- hod.eee@hyderabad.bits-pilani.ac.in

Tel.No:- +91-040 66303597 (Office)

EEE Office:

Mr. Pranay bhaskar & Mrs. C. Aalekhya

Office Assistants (H-223)

E-mail :- eee.office@hyderabad.bits-pilani.ac.in

Tel. No.:- +91-040 66303835 (Office)

Note: All queries related to the Department of Electrical and Electronics Engineering should be addressed to EEE Office and CC to HOD.

Visit us on : [Linked IN](#) , [EEE Website](#)



BITS Pilani **Hyderabad Campus**

Department of Electrical and Electronics Engineering

PhD Admissions 2023-24