Department of Electrical Engineering

M. Tech – Microelectronics and VLSI

Placement Brochure 2021

भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

About Us

The Department of Electrical Engineering(EE) at IIT Hyderabad offers a vibrant environment for postgraduate education and research in many areas of Electrical Engineering.

One such major area includes Micro-electronics and VLSI. The VLSI group at IIT Hyderabad has been actively involved in research and development with numerous publications, patents and conferences around the world.

The MTech curriculum covers all facets of the VLSI industry with equal focus on VLSI Design, Semiconductor Device Fabrication, Analog Circuits, Radio Frequency IC Design, Computer Aided Design and Device Modeling. Research also covers other domains like System on Chip Design, Mixed Signal circuits, Nanoelectronics, Nanophotonics and Signal Processing applications.

Degrees Offered

Academics

At IITH, MTech in Microelectronics and VLSI offers a comprehensive curriculum that enhances knowledge and imparts an attitude to adapt to evolving technological challenges

Core Courses

- Introduction to VLSI Design
- Digital IC Design
- Analog IC Design
- VLSI Technology
- IC for Wireless Communication
- Nanoelectronics – Principles and Devices
- Semiconductor Device Modeling

Elective Courses

- Mixed Signal Design
- Embedded Programming
- Mesoscopic Device Electronics
- Topics in Nanophotonics
- More than Moore Electronics

Laboratories

Advanced Embedded Systems and Digital IC Design

This lab allows students to work with industry standard EDA tools for the complete VLSI design and verification flow from RTL to GDSII. Also, students work on high-end FPGA including XILINX Virtex-7, Kintex-6, Zed boards.

Design of Analog RF Mixed Integrated Circuit (DARMIC) Lab

This lab allows students to work on Analog and RF projects right from designing specifications till the Tape out. Also, this lab has strong tie-ups with semiconductor foundries like TSMC, SCL for fabrication.

Laboratories

Nano-X Cleanroom and Characterization Lab

Cleanroom is for fabrication of micro and nano devices. Students work on fabrication of antennas, sensors, MEMS devices and for characterization of IITH developed devices. Some of the equipment include IR characterization setup, electrical characterization, SEM and TEM.

Nanophotonics Lab

This lab allows students to explore the area of Nano photonics which seeks to miniaturize optical devices on a chip scale. This helps students to believe that such miniaturization has great benefits similar to miniaturization of electronic devices.

Industry Lecture Series

Industry Lecture Series is an initiative taken by the Department of Electrical Engineering, IIT Hyderabad to create an atmosphere to facilitate the exchange of ideas between the Industry Experts, Students and the Faculty. It acts as a bridge between the MTech Curriculum and the latest advancements in the industry, where the students of Microelectronics and VLSI are introduced to current developments and cutting-edge research in different domains of the VLSI Industry.

Students

Dhananjay Mahobia

Currently working on "Time varying and non-reciprocal networks in RF applications" under the guidance of Dr. Abhishek Kumar

Nambi Sreekanth

Currently working on "Low Power Analog Building blocks for Energy Scavenging IC" under the supervision of Dr. Asudeb Dutta

Mannam Anil Kumar

Currently working on "Design of Sigma-Delta ADC for MEMS Gyroscope application" under guidance of Dr. Gajendranath Chowdary

G Abhishek

Currently working on "Nanomaterials based Bio FETs" under the guidance of Dr. Sushmee Badhulika

Uppara Uravakonda Naresh

Currently working on "Design of a Visible Spectrometer for High Performance Liquid Chromatography" under the guidance of Dr. Naresh Emani

Bhukya Thirupathi

Currently working on "Liquid gas sensing (System level)" under the supervision of Dr. Shiv Govind Singh

Students

R Sri Rama Sudhamsu

Currently working on “Design of Hardware Accelerator using FPGA for See-Through Armour" under the guidance of Dr. Amit Acharyya

Shivani Bhatt

Currently working on "Mid-IR Nanophotonic platform for Glucose Sensing" under the supervision of Dr. Naresh Kumar Emani

Pratyush E

Currently working on "Design of Digital PLL in ASIC for high performance MEMS Gyroscope application" under the guidance of Dr. Gajendranath Chowdary

Kruttika Thipsay

Currently working on “Design and implementation of ASIC clouds: Specializing the datacenter for a neuromorphic chip” under guidance of Dr. Amit Acharyya

Minu Thomas

Currently working on "IoT enabled gas sensors for environmental sensing" under the guidance of Dr. Sushmee Badhulika

Sonali Sunil Dulange

Currently working on "FPGA based Battery Management System Design and Implementation" under the guidance of Dr. Amit Acharyya

Students

Satyam Tiwari

Currently working on the "Design and fabrication of Flexible Broadband Photodetector" under the guidance of Dr. Sushmee Badhulika

Datla Tanusha

Currently working on "Multifunctional Photodetector and sensor integrated with AI/ML " under the guidance of Dr. Sushmee Badhulika

Saksham Singhal

Currently working on "Design of AGC, Low power CMOS Peak detector & temp sensor in ASIC for high performance MEMS Gyroscope Application" under the guidance of Dr. Gajendranath Chowdary

Nihal S Raut

Currently working on "Design, modelling, fabrication and characterization of microbolometer for realization of thermal imaging camera" under the guidance of Dr. Shiv Govind Singh

Harshitha Gangu

Currently working on "Design and implementation of server architecture for neuromorphic chip" under the guidance of Dr. Amit Acharyya

Reetika Banerjee

Currently working on "Design of Demodulator, LPF & SPI interface for MEMS Gyro application" under the supervision of Dr. Gajendranath Chowdary

Students

Shantakumar V P

Currently working on “Design, fabrication and characterisation of High temperature piezo resistive crack sensor for aerojet applications” under the guidance of Dr. Shiv Govind Singh

Poludasu Sahaan

Currently working on "Spatio-temporal modulation and its applications" under the supervision of Dr. Naresh Kumar Emani

Jyotirmaya Jyoti

Currently working on the “Time Varying Networks and Non-Reciprocity" under the supervision of Dr. Abhishek Kumar

Sabanaaz

Currently working on "Design of ultra sensitive mid-IR detector using Bound states in the continuum (BIC) " under the guidance of Dr. Naresh Kumar Emani

Students

G Vishnuvardhan

Currently working on "Design & development of low complex architecture for ECG signal monitoring targeting remote health care applications" under the guidance of Dr. Amit Acharyya

Ruchir

Currently working on the 'Design of Time Correlated Single Photon Counting System' under the supervision of Dr. Gajendranath Chowdary and Dr. Naresh Kumar Emani

G Sandeep

Currently working on "Spatial and Temporal modulation of RI in a Nanowire to achieve special properties for device useful for implementation in light applications" under guidance of Dr. Naresh Kumar Emani

Faculty

- 3-D ICs technology Development
- RF MEMS device design simulation fabrication
- Characterization Micro/Nano fluidics

Dr. Shiv Govind Singh
Professor

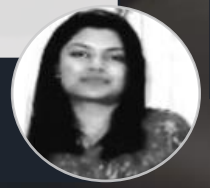
- Signal Processing Algorithm
- VLSI Architectures
- Low Power Design Techniques Electronic Aspects of Pervasive Computing.

Dr. Amit Acharyya
Associate Professor

- Analog Circuit Design
- RFIC
- Semiconductor Devices

Dr. Asudeb Dutta
Associate Professor

- Nanomaterials Devices and circuits.

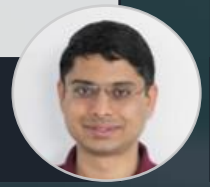


Dr. Sushmee Badhulika
Associate Professor

- Analog Circuit Design
- Mixed Signal Circuit Design

Dr. Gajendranath Chowdary
Assistant Professor

- Nano photonics
- Mid-Infrared Devices
- Integrated Optical Sensors
- Semiconductor Devices

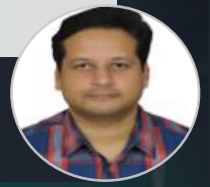


Dr. Naresh Emani
Assistant Professor

- Bio-nano-sensors
- Nano-fluidics
- Large scale microfluidics
- Nanocarbons
- 2D materials
- Composites

Dr. Shishir Kumar
Assistant Professor

- Micro/Nanoelectronics
- Modeling and simulation of electron devices
- Quantum phenomena in nanostructures
- Physical and wave electronics



Dr. Kaushik Nayak
Assistant Professor

- Analog and radio-frequency IC design
- Full-duplex wireless communication

Dr. Abhishek Kumar
Assistant Professor

- Semiconductor Device Physics
- Computational Nanoelectronics
- TCAD Development

Dr. Oves Badami
Assistant Professor

Contact Us

office.placement@iith.ac.in

Student Coordinators

R S R Sudhamsu
7781811807

Shivani Bhatt
7906666151

Dhananjay Mahobia
9752386361

Pratyush E
9550862874

G Sandeep
9676489270

Kruttika Thipsay
91311606139

Dr. Amit Acharyya
Department Advisor

Dr. Abhinav Kumar
Faculty Advisor for Placements