



# VLSI DESIGN TOOLS AND TECHNOLOGY

INDIAN INSTITUTE OF TECHNOLOGY DELHI

## Recruitment Brochure 2022-23 (VDTT)

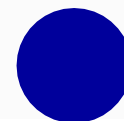
### PLACEMENT TEAM 2022-23 FACULTY PLACEMENT COORDINATOR

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### STUDENT PLACEMENT COORDINATOR

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<http://vdttd.iitd.ac.in/>



## **ABOUT US**

**The VLSI Design, Tools, and Technology (VDTT) M.Tech/MS(R) programs at IIT Delhi are one of the most sought after Masters programmes in the country. It is one of the few programmes worldwide that only admit students sponsored by an industry or a research project. Each student has a co-supervisor from the sponsor and can do half of the final year project at the sponsor's site. Typical GATE cutoffs for the admission interview have been in the 99.5 percentile or higher range.**

**Students in the programme choose one of three streams. The first is focused on analog and digital design; the second on machine learning and IoT; the last on sensors, devices, and nanotechnology. VDTT students registering for placement have completed their core courses and need to take a few electives and complete their dissertation project. Many students have taped out custom ASICs and SOCs. The diversity of courses and the fact that these students form a very select band at the top of GATE examinees makes them a very sought after talent pool. Not only VLSI majors, but startups, leading analytics and computational finance organizations, and industries in the telecom sector have made offers to VDTT students in past years. Some VDTT students have started their own ventures, while others have done so after a few years.**



# IMPORTANT COURSES

- ❖ Analog Integrated Circuits
- ❖ Mixed Signal Circuit Design
- ❖ Semiconductor Memories Design
- ❖ MOS VLSI Design
- ❖ IC Technology
- ❖ Advanced Semiconductor Devices
- ❖ Compact Modeling of Semiconductors
- ❖ RF and Microwave Active Circuits
- ❖ CMOS RF IC Design
- ❖ Synthesis of Digital Systems
- ❖ Introduction to Machine Learning
- ❖ Neuromorphic Engineering
- ❖ Physical Design Lab
- ❖ Digital System Design Lab



# LABORATORY FACILITIES

- ❖ VLSI Design Lab (EE)
- ❖ Philips VLSI Design Lab (CSE)
- ❖ Digital Design Hardware Lab
- ❖ Digital signal processing lab
- ❖ VDTT Lab

## Tools and Design Software

- ❖ Cadence Design suite
- ❖ Synopsys Synthesis Tools
- ❖ Mentor Graphics Catapult C Synthesis
- ❖ Mentor Graphics IC Nanometer Design Tools
- ❖ MAGMA Physical Design Tools
- ❖ ATLAS device simulation framework
- ❖ Xilinx Foundation Series



# LIBRARY

- ❖ IITD central Library
- ❖ VDTT Library

## FABRICATION FACILITY

- ❖ IC Fabrication and Testing facility at the CARE for 3-micron technology

## PAST/ONGOING INDUSTRIAL COLLABORATIONS/ PROJECTS:

- |                            |                                |
|----------------------------|--------------------------------|
| ❖ Intel                    | ❖ SiRF                         |
| ❖ Cadence Design Systems   | ❖ Philips Research Netherlands |
| ❖ Texas Instruments        | ❖ National Semiconductors      |
| ❖ STMicroelectronics       | ❖ Nokia Research Germany       |
| ❖ IBM                      | ❖ Qualcomm                     |
| ❖ Freescale                | ❖ Sonosics                     |
| ❖ EADS                     | ❖ Mentor                       |
| ❖ Calypto Design Solutions | ❖ Analog Devices               |
| ❖ Aura semiconductors      | ❖ Synplicity                   |
| ❖ Cypress Semiconductors   | ❖ TranSwitch                   |
| ❖ NXP Semiconductors       | ❖ Emerging Memory Tech(EMT)    |
| ❖ Synopsys                 | ❖ Tanmic Systems               |



# PROJECTS UNDERTAKEN BY STUDENTS AS PART OF ACADEMIC COURSES

- ❖ Design of Low Noise Amplifier
- ❖ Design of Phase locked loop
- ❖ Analog-to-digital converter design (FLASH)

## ON-GOING M.TECH PROJECTS

- ❖ Design of low noise amplifier of noise figure below 1dB
- ❖ Design of low drop out regulator with chopper amplifier
- ❖ Sub system design and exploration of PLL's
- ❖ Improvement of DRAM controller performance
- ❖ Thermal modelling of a PCB



# FACULTY PROFILES - Department of electrical engineering

- ❖ **Prof. Shouribrata Chatterjee** Analog Circuit Design & VLSI, Analog & Digital Filter Design, Low Power & Low Voltage Circuit Techniques, Measurement Techniques
- ❖ **Prof. M. Jagadesh Kumar** Nanoscale SOI MOSFETs for CMOS applications, Strained Silicon Devices, SiC devices ,Power semiconductor devices, Metal-Semiconductor devices.
- ❖ **Prof. Jayadeva** Biological and Artificial Neural Networks, Neuromorphic Engineering, Optimization, VLSI Design
- ❖ **Prof. Manan Suri** Semiconductor devices, emerging non-volatile resistive memory technology, and neuromorphic computing
- ❖ **Prof. Anuj Dhawan** Nanomaterials, Photonic Devices, Biosensors,Biomedical Devices
- ❖ **Prof. Mukul Sarkar** CMOS Image Sensor, Network Devices, Low power ECG Amplifier
- ❖ **Prof. Bhaskar Mitra** Microsystem design, Microfluidics, Electronic design, Microplasmas, Chemical Sensors
- ❖ **Prof. Madhusudan Singh** Devices and Materials,Flexible Electronics and Optoelectronics, Printing Methods.
- ❖ **Prof. A. P. Pratosh** Vision and image processing audio, speech and music analytics and learning (deep learning, sequential modelling and transfer learning)
- ❖ **Prof. Debanjan Bhowmik** Magnetism, Spintronics, Micromagnetics, Memory devices, Condensed Matter Physics.
- ❖ **Prof. Ankesh Jain** Analog and Mixed signal circuit design, Data Converters , Phase locked loop (PLL) and Clock synthesizers, High speed circuit design, Low voltage circuit design
- ❖ **Prof. Rakesh Palani** Analog Electronics, MOS VLSI Design, Analog IC , Mixed Signal Circuits
- ❖ **Prof. Mustafijur Rahman** Analog Integrated Circuits, CMOS RF IC Design, Analog electronics





# FACULTY PROFILES - Department of Computer Science

- ❖ **Prof. Anshul Kumar** Embedded System Design ,Hardware Software CoDesign, Computer Architecture ,Application Specific Processor Synthesis, VLSI Design Automation.
- ❖ **Prof. M. Balakrishnan** Application Specific Processor Design,High-level Design & Modelling, FPGA based DesApplication Specific Processor Design,High-level Design & Modelling, FPGA based Design & Design Tools,Hardware-software Codesign and System Synthesis.
- ❖ **Prof. Kolin Paul** Reconfigurable Computing,(co) Design of VLSI systems
- ❖ **Prof. Preeti Ranjan Panda** Embedded Systems - Architectures and Compilers, Caches, Memory Optimization, Hardware/Software design, Behavioral Synthesis, Low Power Design, Specification Languages
- ❖ **Prof. Smruti Ranjan Sarangi** Advanced computer architecture, High performance compilers, Futuristic operating systems

# FACULTY PROFILES - Centre for Applied Research in Electronics

- ❖ **Prof. Arun Kumar** Digital signal processing, speech processing, underwater acoustics and communications
- ❖ **Prof. R. Bahl** Sensor System Design and Simulation, Acoustical Imaging, Digital Signal and Image Processing, Bio Sonar
- ❖ **Prof. Samaresh Das** Nano Electronics and Optoelectronics
- ❖ **Prof. Pushparaj Singh** Microelectromechanical System (MEMs) sensors and micro-systems
- ❖ **Prof. Ankur Gupta** MOS Device Design, Nano Technology, Device-Circuit Co-Design, DC/RF Characterization & modeling, Interface Circuit Design





# RECRUITMENT PROCEDURE

- ❖ Student-in-charge or placement officer, Office of Career and Services shall provide the company a Job Notification Form(JNF) <https://tnp.iitd.ac.in/>
- ❖ JNF requires details of the job offer – role offered, pay package, place of posting, eligible departments.
- ❖ Once the filled-in JNF with all the required details is received, companies are assigned username and password to access their online account at <https://tnp.iitd.ac.in/>
- ❖ Companies are also assigned space on the server on which they may upload any presentation, videos, data or other information they want the student to see.
- ❖ The JNF has to be frozen on the OCS website by the company till a deadline.
- ❖ Students shall be able to view all the details and the eligible candidates may apply.
- ❖ After the application deadline for the students, the resumes are visible to the company.
- ❖ The company submits shortlist on its online account before a deadline. Short-listed students get notified.
- ❖ The placement office allots the dates for the campus interviews.
- ❖ After the completion of the selection procedure on campus, company is required to announce the final list of students on the same day itself.

For Further details regarding Recruitment Process :

**Ms. Anishya Madan**

**Head Of Department**

**Office of Career and Services**

[hodtnp@admin.iitd.ernet.in](mailto:hodtnp@admin.iitd.ernet.in)

**Phone: 011-26591731/32**



## PAST RECRUITERS

