VLSI CAD Laboratory

VLSI technology revolves around designing solid state electronic devices. The rapid advance in VLSI technology has led to phenomenal growth in electronics industry over the last few decades. The use of integrated circuits has been growing at a very fast pace in telecommunication, consumer electronics and high-performance computing. This trend is expected to continue with important implications for VLSI and system design. This demands students to be well trained in Analog and Digital VLSI and should be familiar with industry grade IC design tools.

VLSI Laboratory is aimed at providing the knowledge required for conception, designing and simulation of integrated circuits in Analog and Digital VLSI for undergraduate and post-graduate students and Ph.D. scholars. To emphasize the practical aspects of analog and digital VLSI, the lab is equipped with hardware and software tools which enable the students to perform a wide variety of experiments and design problems. This laboratory mainly used for conducting practical classes of the course M.Tech and B.Tech

This lab also caters to a vibrant research group in VLSI design consisting of 10 faculty members, 15 research scholars, PG and UG students. Research interests of faculty members include Bipolar and MOS Analog Integrated Circuits, Linear and Non-Linear Current mode circuits, Organic Electronics, Device Modelling, Digital System Designing using ASIC/ FPGAs and Digital VLSI Design, Analog VLSI Design as well as Mixed Signal Design.

Lab Resources

This fully equipped VLSI CAD Lab provides training and research activities for integrated circuits characterisation in both analog and digital domains with following Software and Hardware tools:

Software	Hardware
1. CADENCE University Tool Bundle comprising of Full Custom/Analog Mixed Signal/ RFIC design flow, Formal verification, HDL based design, PCB Design flow.	1. Server PC (Intel Xeon) and Client PC (Intel i5)
2. Mentor Graphics Tool Bundle	2. Spartan FPGA Kits and Altera FPGA Board
3. OrCAD PSPICE A/D Mixed Mode Simulation and OrCAD Optimizer	3. a) Analog 200 MHz Digital Storage Oscilloscope b) Keysight Hand held 100 KHz Digita Multimeters c) GW Instek Precision LCR meters
4. SYMICA EDA (AMS) Design CDS Toolkit	4. VLSI Universal FPGA-CPLD development system alongwith daughter boards and I/O boards

5. Silvaco TCAD for modelling semiconductor operation and semiconductor device fabrication	5. a) Trinity DC power supply b) Keysight 10 MHz to 25 MHz frequency 4 channel Function Generator c) Keysight Benchtop Digital Multimeter

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VLSI CAD LABORATORY

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