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**PLACEMENT BROCHURE
2010-2012**

**DEPARTMENT OF ELECTRONIC SCIENCE
UNIVERSITY OF PUNE
PUNE- 411007**



About the Department:

The department of Electronic Science is an integral part of the University of Pune was founded in 1984. It has been successfully producing postgraduates and doctorates of excellent caliber.

In recent years, electronics has made unprecedented growth in terms of good technology, new ideas and principles throughout the world. The rate of obsolescence of technologies has also increased tremendously. Researchers, academicians, industries and the society at large have to work in unison to meet the challenges of the rapidly growing discipline. The research organizations and industries that work in the frontier area are in need of highly skilled and scientifically oriented manpower. This manpower can be available only with flexible, adaptive and progressive training programs and a cohesive interaction among the research organizations, academicians and industries.

Since its inception in 1984, Department of Electronic Science in Pune University has been consistently working towards this goal.

The MISSION of the Department is to advance scientific knowledge through active research in key areas and percolating the same down to graduate level to create highly skilled and scientifically oriented manpower.

Core Faculty

Faculty member

Academic Interests

Dr. S.V. Ghaisas

Computer simulations related to non-equilibrium phenomena, Calculations of nanoparticle electronic structures, Development of solar cell materials, HPC Computations for material, simulations, development of test facilities in Solar thermal and PV.

Dr. (Ms.) S.A. Gangal

Sensors, Materials, Microwaves, Micro-Electromechanical Devices, Biomedical Instrumentation.

Dr. A.D. Shaligram

VLSI Design, Optoelectronics, PC/Microcontroller based Instrumentation Simulation software development, Biomedical Instrumentation and sensors.

Dr. (Mrs.) D.C. Gharpure

Image Processing and Machine Vision Applications, Pattern Recognition using Artificial Neural Networks, Virtual Instrumentation, Embedded system design.



Visiting Faculty

Faculty member

Academic Interests

Prof. R.N. Karekar

Atmospheric Science, Electronics, thin and thick film Physics, Microwaves, Sensors, Microstriplines, Remote Sensing.

Dr. S. Ananthakrishnan

Electromagnetics, Antenna Design, RF Design, Radio Astronomy.

Mr. M.R. Sankararaman

Electromagnetics, Antenna Design, Fiber Optic Communication.

Mr. ShyamKundapurkar

Currently working with Media-Magic Technologies, specializing in IT and Embedded System Design.

Mr. S. Vijay Kumar

Currently working with Imagination Technologies Ltd., specializing in Computer Graphics, Supercomputing and Embedded System Design.

Mr. VaibhavPavnaskar

Currently working with a RF short range IP producer in Pune. Specializing in GSM Operations, GSM RF frontend design, Analog design, IC layout and PLLs.

Mr. DhananjayBodas

Currently working with Agharkar Research Institute, as a scientist. Specializing in biomedical micro devices, micro-nano fabrication processes, micro-nano fluidics, surface and interface studies, thin film technology and nanoparticle research.



Academic Program:

The department offers M.Sc., M.Phil. and Ph.D. programs. The M.Sc. program run by the department is an autonomous course and the course contents are designed considering the latest developments in the field. The program molds students towards mastery in the areas of individual interest, through course work and hands on practical sessions.

The purpose of the Master's Program is to provide a broad education within Electronic Science with opportunities to specialize in a specific area namely VLSI Design, Embedded System Design and Communication Technology. This is achieved through the set of fundamental subjects known as core courses, in addition to advanced courses that lay a further base, for exploration in the area of specialization. Syllabi for the advance courses are flexible and are revised from time to time considering the latest trends and developments in the technology.

The well-equipped laboratories and individual projects provide exposure to principles and techniques of analysis, design and experimentation in the field selected. The department also offers an internship program of six months, in the final semester, that enable students to get training in industrial environments, ranging from collaborative industrial projects done on campus to long term experiences at partner companies. The detailed syllabus is available on the web site, <http://electronics.unipune.ac.in>.

In addition the department also has a well maintained library where standard text books and reference books on various topics are available.

Core courses:

- Quantum and Statistical Mechanics.
- Digital System Design.
- Mathematical Method in Electronics.
- VLSI Design
- Properties of Electronic Materials.
- Electromagnetic Fields and Waves.
- Embedded System Applications.
- Foundation Course In Design IPR.
- Digital Communication Technology.

Specialization courses:

VLSI design

- Processes in device fabrication.
- Advanced VLSI Design
- Foundation Course in IC Layout Design.
- Foundation Course In IPR Management.

Embedded system design

- Embedded System Design.
- Industrial Controllers: PLC and PID.
- Processor Architecture Design.
- Operating System and RTOS.
- Wireless Embedded System.

Embedded and Communication System Design

- Optical Fiber Communication.
- Antenna Design.
- Communication System Design.

- Wireless Embedded Systems.
- Processor Architecture Design.



VLSI and Communication System Design

- Foundation Course in IC Layout Design
- Communication System Design.
- Processes in device fabrication.
- Foundation Course In IPR Management.
- Antenna Designing.
- Optical Fiber Communication.

General Electives:

- DSP: Algorithms and Application.
- Electronic Circuit Design and Analysis.
- VHDL and Verilog: Testing and Verification
- Power Supplies.
- Sensors and Actuators.
- C Programming.
- Computational Methods in Electronics.
- Industrial Applications of Optoelectronics.
- Advanced Test and Measurement Instruments.
- Technical Communication.
- Power Electronics Devices & Systems.
- Fundamentals of MEMS Design and Fabrication.
- Data Communication.
- Mechatronics.
- Mobile Communication System.

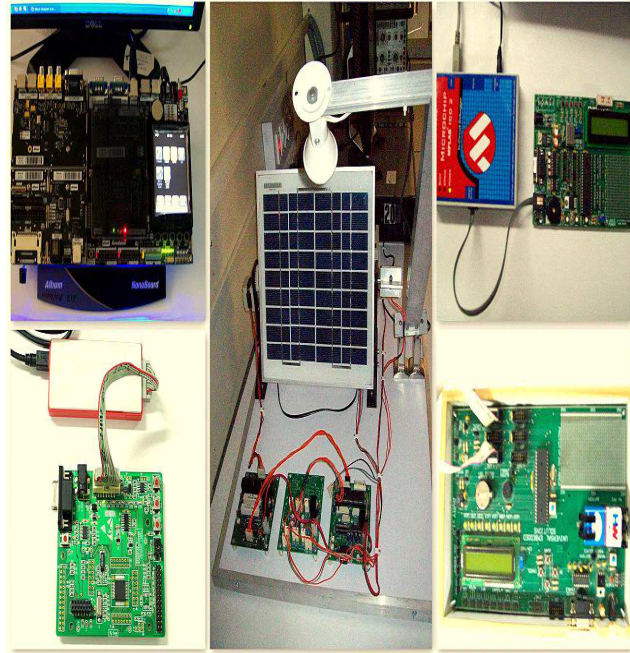
Facilities

Computer Laboratory

- RC-Encounter(Cadence)
- 'C' compilers, Keil IDE, MATLAB, NI-LabVIEW.
- Xilinx Tools (CPLD/ FPGA design)
- ORCAD: P-Spice, LT-SPIICE
- Mentor Graphics PADS.

Embedded Systems Laboratory

- Microcontroller Kits8051,ARM 7,ARM 9 (MCB 2300 KIT), Freescale HCS08, PIC, AVR.
- Data Acquisition System.
- Embedded System Design and Development.
- FPGA Kits from Xilinx.
- Programming under 'C' and MATLAB.



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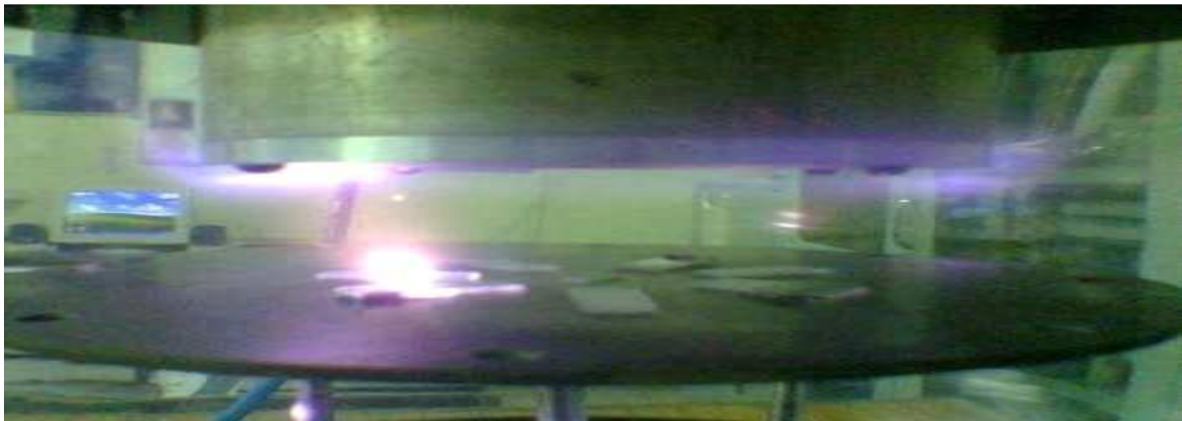
VLSI Laboratory

COMPUTER LAB

- Cadence 5.1.41(GPDK 180nm)
- DRC-LVS Tools: Diva, Assura, Callibre.
- Cadence 6.1.41(GPGK 180nm,65nm,45nm)
- Mentor Graphics(Modelsim, Precision, IC Station)
- RC-encounter(Cadence)

MEMS LAB

- Screen Printing and Firing Furnace.
- Masks for Lithography.
- Spin Coating Facility.
- Ultra Sonic Cleaner.
- Vacuum Evaporation System.
- Plasma polymerization System.
- Activated Reactive vaporization.
- RF, magnetron, DC Sputtering System.



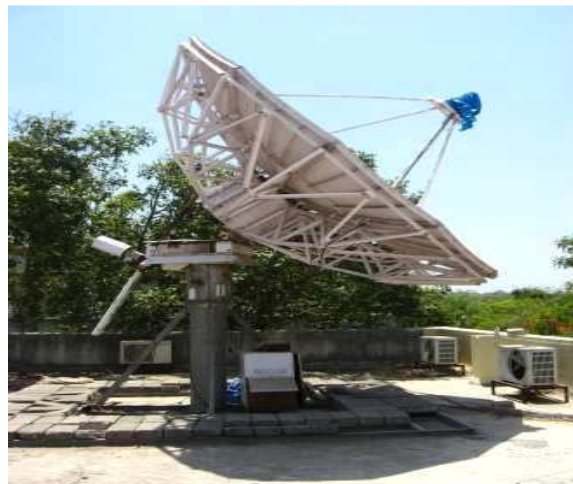
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RF and Communication Laboratory

- Digital and fiber optic communication trainer kits.
- Antenna Trainer Kit.
- RF antennas and circuit simulation tools (CST)
- Numerical Electromagnetic coding(NEC).
- RF test and measurement instruments (Vector Network Analyzer (300 KHz-3 GHz),
- Spectrum Analyzer (100 KHz-6 GHz), RF Signal Generators etc.)

State-of-art anti-static workstation .

- A complete Radio Astronomy Receiver along with two 4.5m dish antennas.



|| DIES ||

What Gives Us An Edge

Our students have hands on experience on tools like LabVIEW, MATLAB, Cadence, Xilinx, FPGAs, Plotter interface, LCD interface, Dataacquisition systems like NI DAQ cards, various microcontroller kits like MCS 51, AVR, PIC, and Freescale. Students are also trained on the state of art facilities including communication and fabrication facilities available in the department. Easy availability of instruments like Network Analyzer, Spectrum analyzer, DSOs and facilities like Internet, Wi-Fi etc. make our department a hub

for researchers. Recently, department has obtained 4.5 meter parabolic dish antenna with aid of NCRA-TIFR. Currently the department is involved in research areas related to application of artificial neural networks, embedded system design, development and fabrication of sensors, image processing, modeling and simulations, design and development of optoelectronic systems, material science etc. Our tie ups with research institutes and industries help to expose students to latest technologies and keeps them way ahead of other non DOES students.

Involvement of faculty in research imparts knowledge of upcoming technologies to students. Students are taught to think independently from the beginning. Regular exams, viva-voce, presentations, assignments, mini projects form a part of continuous internal assessment for grading students. Students are evaluated on 6 grade point scale which helps to maintain healthy competition.

The Placement cell

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