

## FACULTY DEVELOPMENT PROGRAM

on

# "VLSI Devices and Technology"

Organised by

**Electronics & ICT Academy**

**IIT Roorkee**



In Association with

**Centre for Development of  
Advanced Computing, Mohali**



**Jan 08, 2018 - Jan 12, 2018**

**Experts from Academia**

**Dr. Anand Bulusu**  
ECE Dept.  
IIT Roorkee

**Dr. Sanjeev Manhas**  
ECE Dept.  
IIT Roorkee

**Experts from Industry**

SCL, Chandigarh

**Supported by**

Ministry of Electronics & Information Technology  
Government of India



**Venue**

**C-DAC, A-34 Industrial area, Phase-VIII,  
Mohali Punjab**

## Objective of the Course

- A thorough introduction to the physics and fabrication of VLSI devices, including FinFETs.
- To enable faculty in using TCAD tools for device and process simulations.
- Understanding and hands-on with device model for circuit simulation.

## Benefits and Outcomes of the Course

- Understand the physics of semiconductor devices, modern CMOS and VLSI process flow.
- Understand and hands-on with device and process simulations TCAD device (such as Synopsis) including mixed-mode simulations.
- A device/process introduction for circuit design/layout.

**At the end of the program, participants will be able to:**

- Get sound understanding of process and device simulation and modelling.
- Implement and upgrade lab facilities in the parent institutes in areas of VLSI, Microelectronics, TCAD and MEMS.
- Guide/Mentor the students to seek opportunities in process TCAD & device modelling.

## Lab Platform/Tools to Used

- Linux (Scientific Linux/Cent OS)
- T-CAD Tool (synopsis)
- SPICE (BSIM model)

## Focus Area

- Basic concepts (quantum, statistical and transport), Physics of Junctions, MOS Capacitor, and MOSFETs.
- SPICE level-3 for circuit simulation.
- TCAD devices and mixed-mode simulations.
- Unit fabrication processes and CMOS process flow.
- TCAD process simulation.
- Introduction to nanoscale transistors and process technologies.

## Program Features

- The program is split into lectures and lab sessions.
- Quizzes and project work for enhanced learning.
- Hands-on experience on basic & advanced-level topics.
- Interaction & learning with experts from academia & industry.
- Certificates to the participants by E&ICT Academy IITR.

## Coordinators

**IIT Roorkee**

- **Dr. Sanjeev Manhas**, PI, E&ICT Academy
- **Dr. Anand Bulusu**, ECE Dept.

**C-DAC Mohali**

- **Dr. Balwinder Singh**, Principal Engineer  
balwinder@cdac.in, 9888000646
- **Ms. Manjit kaur**, Sr. Engineer  
manjit@cdac.in, 9464523344

## Who Can Attend ?

Program is open to faculty members/research scholars/PG students from colleges/universities, and industry personnel working in the concerned/allied discipline.

## Registration Fee

Faculty members: ₹ 2,500/-

Research scholars: ₹ 2,500/-

Persons from Industry: ₹ 3,000/-  
(with Food & Accommodation)

## Payment Details

DD in favor of "Dean SRIC IIT Roorkee" payable at Roorkee  
"OR"

Make Online Payment by NEFT/RTGS on given detail

Account Name: Research Project, IIT Roorkee

Account Number: 33012172097

IFSC code: SBIN0001069

## How to Apply

Step 1: Make Payment

Step 2: Participants may fill registration form through Academy website (<http://eict.iitr.ac.in>).

OR

Step 2: Send a duly filled-in registration form along with Demand Draft to Academy address.

Mr. Prateek Sharma, EICT Academy, ECE Department, IIT Roorkee-247667

## Important Dates

Last Date For Online  
Registration:  
4th Jan 2018

Last Date For Receiving  
Application: 5th Jan 2018

## EICT Academy IITR

Electronics and ICT Academy (E&ICT) at IIT Roorkee (funded by Ministry of Electronics and Information Technology) aims to enrich and upgrade teaching and research competences of engineering faculties of institutes/colleges by conducting courses and workshops in fundamentals as well as emerging areas of E&ICT and enabled areas. The programs are conducted by well-known industry partners, resource persons from leading academia and experts from renowned R&D organizations.



## Activities of the Academy

- Specialized training on basic and advanced level topics with hands-on experience in the emerging areas of Electronics & ICT.
- Setup the activity centers to conduct FDPs locally at institutes/colleges.
- Curriculum development for the industry.
- Continuing Education Programme for students/working professionals.
- Design, develop and delivery of specialized modules for specific research areas in industry.

## Faculty Development Program

on

## "VLSI Devices and Technology"

Jan 08, 2018 – Jan 12, 2018



## REGISTRATION FORM

Applicant Name \_\_\_\_\_

Gender: \_\_\_\_\_

Category (GEN/OBC/SC/ST): \_\_\_\_\_

Designation: \_\_\_\_\_

Name and Address of the  
Organizatio/Institute: \_\_\_\_\_

City/Town: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Do you need Accommodation?  
(Yes/No): \_\_\_\_\_

DD Number: \_\_\_\_\_

Date: \_\_\_\_\_

Issuing Bank: \_\_\_\_\_

Payable at: \_\_\_\_\_

Signature of the Applicant

## Contact Us

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