

## FACULTY DEVELOPMENT PROGRAM

On

# "VLSI Devices and Technology"

Under the aegis of

**Electronics & ICT Academy  
IIT Roorkee**



Oct 03, 2017 - Oct 08, 2017

### Experts from Academia/Industry

Dr. Sanjeev Manhas  
ECE Dept.  
IIT Roorkee

Dr. Arnab Datta  
ECE Dept.  
IIT Roorkee

Dr. Sudeb Dasgupta  
ECE Dept.  
IIT Roorkee

Mr. N Kannan  
Freescale  
Semiconductor

Mr. Parmanand Singh  
ARM Technology

Supported by

Ministry of Electronics & Information Technology  
Government of India



Venue

**Indian Institute of Technology  
Roorkee**

## 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.
- Hands-on experience on mixed-mode and process simulations TCAD device (such as synopsis).
- A device/process introduction for circuit design/layout.

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

- Upgrade the lab facilities in the parent institutes in areas of VLSI, Microelectronics, TCAD, MEMS, and sensors.
- Guide/Mentor the students to seek opportunities in process TCAD & device modeling.

## 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.

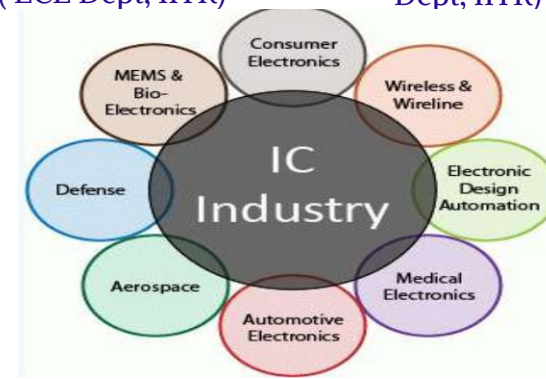
## Program Features

- 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

Dr. Anand Bulusu,  
Dr. Arnab Datta  
(ECE Dept, IITR)

Dr. Sanjeev Manhas, P.I.  
E&ICT Academy, ECE  
Dept, IITR)



## 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: ₹ 1,500/-

Research scholars: ₹ 1,500/-

Persons from Industry: ₹ 3,000/-

## 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:**

**28th Sep 2017**

**Last Date For Receiving  
Application: 29th Sep 2017**

## 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

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## 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

Electronics and ICT Academy, IIT Roorkee

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