

Summer Course
On

'MOSFET Modeling & Simulation' MMS-2018

July 06-08, 2018



Conveners

Dr. Pramod Kumar Tiwari
Dr. Jawar Singh

Organized by

Department of Electrical Engineering,
Indian Institute of Technology Patna
Bihta - 801106, Bihar
Web: www.iitp.ac.in

About the Course

The emergence and progress in microelectronics have revolutionized the telecommunications and information science and engineering in the 20th century. It would be difficult to identify or even conceive of any other contemporary area of engineering that has had a more dramatic, pervasive and beneficial influence on the way we live and work. The physics based modeling of the electrical and optical characteristics of various semiconductor devices is an important area of research for the growth and development of semiconductor science and technology. While analytical modeling gives the physical insight of the device characteristics, TCAD simulation can provide the first hand information of various advanced semiconductor devices without going through complex mathematical modeling and practical fabrication and experimentation. The basic objective of this summer course is to introduce various modeling and simulation techniques used for the performance characterization of advanced semiconductor devices including nanoscale field-effect-transistors (FETs), nanoelectronic and optoelectronic devices to the young graduate students and research scholars of various technical colleges and universities. The participants will also be introduced to the use of different industry standard TCAD software (e.g. Synopsis- TCAD and Cogenda-Visual TCAD) for simulating various 2D and 3D semiconductor devices. The course will include both the expert lectures and practical sessions.

Topics

- ✓ Fundamentals of various Field Effect Transistors (FETs)
- ✓ Scaling of CMOS Devices: Issues and Challenges
- ✓ Short-channel MOSFET modeling & Simulation
- ✓ Advanced MOS Transistors: Tunnel-FETs (TFETs), Fin-FETs, Junctionless FETs
- ✓ Compact Device Modeling Techniques.

Also included:

- ✓ Laboratory visits and Hands-on training sessions
- ✓ New research problems in Nano electronics
- ✓ How to write research project and papers

Who Can Apply?

Faculties, researchers from industries and Institutes, graduate and post graduate students working in the areas of Microelectronics may register for the course.

How to Apply?

Interested participants may send their application in prescribed format along with the registration fees through demand draft in favor of Indian Institute of Technology Patna, payable at Bihta on or before 1st July, 2018 addressed to Dr. Pramod Kumar Tiwari, Department of Electrical Engineering, Indian Institute of Technology, Patna, Pin-801106, Bihar.

Registration Fee

Faculties **Rs. 5000/-**

Employees from Industry and R&D Organizations **Rs. 10000/-**

Research scholars & students **Rs. 3000/-**

Accommodations and food will be provided to the participants in the Institute hostels and guest houses on payment basis.

Tentative List of Speakers

Dr. Pramod Kumar Tiwari, IIT Patna
Dr. Jawar Singh, IIT Patna

Important Dates

Receiving filled up application: 1st July, 2018
Intimation by e-mail: 3rd July, 2018

Interested candidate can submit their choice by filling this form online

<https://goo.gl/forms/J3TyIwEuNcGJrxhy1>

Schedule

Date	Time	Topic/Event
06 th July, 2018	09.00 – 09.30	Inauguration
	09.45 – 11.45	Fundamentals of MOS Devices
	11.50 – 13.50	Scaling of CMOS Devices: Issues and Challenges
	15.00 – 17.00	Short-channel MOSFET modeling
07 th July, 2018	09.00 – 11.00	Compact modeling techniques of MOSFET
	11.15 – 13.15	Large-signal Modeling of MOSFET
	15.00 – 17.00	Lab Visit
08 th July, 2018	09.00 – 11.00	Advanced MOS Transistors -TFET, Junctionless etc.
	11.15 – 13.15	New research problems in Nano electronics
	15.00 – 17.00	Hands-on-Training and valedictory

Contact Details

Dr. Pramod Kumar Tiwari

Assistant Professor

Department of EE

Indian Institute of Technology Patna

Bihta - 801106, Bihar, India

Phone: 0612-3028351 (office)

91 9437809739 (cell)

E-mail: pktiware@iitp.ac.in

pramod23amu@gmail.com

Summer Course On

'MOSFET Modeling & Simulation' MMS-2018

July 06-08, 2018

REGISTRATION FORM

Name:

Designation:.....

Affiliated to:.....

Address for communication:

.....

.....

E-mail:.....

Phone:

Amount:.....

D. D. No. :..... Drawn on :.....

Bank:.....

Accommodation if required: YES /NO

Date and time of arrival:

Signature of candidate:

About IIT Patna



Indian Institute of Technology Patna is an autonomous institute of education and research in science, engineering and technology located in Bihta, 35km from Patna. As of today, IIT Patna has 10 academic departments that offer B.Tech, M.Tech and PhD programs. The faculty members of this institute come with academic and research training from various institutes of excellence within the country and abroad. The recent publication records of the faculty with several practical constraints appear to be outstanding. It includes many national and international journals of repute. Recently, IIT Patna has been ranked as the 19th best engineering college in the recently released ranking by the Human Resource Ministry, Govt. of India.

HOW TO REACH

IIT Patna's campus is located at Bihta, 35 km from Patna and, at a 501 acres (203 ha) site. The nearest railway station is Bihta, 2 km from the campus. It is located 28 km west of Patna Junction railway station. IIT Patna has well road connectivity to and from Patna. Regular bus services have been provided by the Govt. of Bihar from Gandhi Maidan, Patna to IIT Patna campus. The nearest airport to reach IIT Patna campus is Jai Prakash Narayan Domestic Airport, Patna, which is located 5 kilometres southwest of Patna.