



FACULTY DEVELOPMENT PROGRAMME (FDP)
ON
NANOELECTRONICS: DESIGN AND SIMULATION

(18th – 22nd May, 2020)

Organized by

E & ICT Academy, Indian Institute of Technology, Roorkee

(Supported by Ministry of Electronics and Information Technology (MeitY), GOI)

In association with

Department of Electronics Engineering, IIT (BHU)



भारतीय
प्रौद्योगिकी
संस्थान
काशी हिन्दू विश्वविद्यालय



INDIAN
INSTITUTE OF
TECHNOLOGY
BANARAS HINDU UNIVERSITY

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.

About the FDP:

As part of this initiative, a Faculty Development Programme (FDP) on "Nanoelectronics: Design and Simulation" is being conducted at Indian Institute of Technology (BHU) Varanasi, Varanasi, U.P to the Faculty members of Engineering, MCA, Science, Management and other allied degree colleges.

Title: Nanoelectronics: Design and Simulation

This course has following major objectives/benefits

1. To introduce participants to emerging devices, modeling and simulation methodologies and applications in the area of Nanoelectronics.
2. To discuss design, operation and modeling of nano-scale devices.
3. A discrete view of spintronic and optoelectronic devices for the post-cmos era.

A hands-on demonstration of modeling and simulation of nanowire, multigate, spintronic devices using advanced SPICE and TCAD simulators.

Major Course Contents:

- Introduction to Nano-scale MOS modeling
- Nanowire, Multigate (MuG), and tunneling based MOS devices
- Optoelectronic devices
- Thin film devices
- Spintronic devices and non-volatile logic
- Basic illustrations of SPICE with examples
- Design and modeling using SPICE
- Basic Illustration of TCAD with examples
- TCAD Simulation of advanced nanoscale devices (Diode, MOSFET, 2D FinFET)
- Modeling and simulation of advanced optoelectronic devices
- Spintronic device simulation using OOMMF

Faculty conducting this programme:

The programme will be conducted by E&ICT Academy IIT Roorkee in association with the faculty members from IIT BHU; Academicians/experts in the concerned field from IITs/Industry are invited to deliver lectures in the programme. Speakers from other renowned institutions are also expected to deliver as part of the course.

Venue:

Department of Electronics Engineering, IIT (BHU), BHU Campus, Varanasi, 221005, India.

Eligibility:

The programme is open to faculty/research scholars of Engineering Colleges and other allied disciplines in India. Industry personnel working in the concerned /allied discipline can also attend. Faculty members from non engineering background (Science, Commerce, Arts, Management) can also take part in EICT courses, if they are interested.

Registration Fee Particulars:

Research Scholars	1000
Faculty	
Industry Professional	2500

The fee is to be paid through online transfer using the following details:

Online:

(<https://www.onlinesbi.com/sbicollect/icollecthome.htm>)

Read the instruction carefully for payment before filling the online registration form.

Note:

- No TA/DA will be paid for the participants.
- Working lunch, tea & snacks would be provided during the training in the campus.
- Please carry your personal laptops for the training.

Food & Accommodation: (on self paid basis)

Food & Accommodation will be provided to the selected outside participants on prior request and payment, based on availability. Prior request of accommodation has to be done through email to the coordinator (at shivam.ece@iitbhu.ac.in) after the online registration fee has been paid.

How to apply:

A filled in form of application in the prescribed format duly signed and sponsored by appropriate authorities (along with payment receipt) should reach the coordinator by email and produced at the time of course. It is also mandatory to fill the following google form and selection will be intimated only through mail.

<https://forms.gle/7C8dRjT7Z63XV4wZA>

Selection Criteria:

Selection will be done based on first-come-first-serve basis to a maximum number of 40 (forty). Additionally, 5 participants from industry are allowed to participate. The list of selected participants will be intimated through e-mail. Candidates will be issued satisfactory certificates on successful completion of the course.

Important dates:

Last date (Online Application & Payment)	25 th April, 2020
Selection List by E- mail	2 nd to 5 th May, 2020
Duration of the course	18 th – 22 rd May, 2020

About IIT(BHU):

The Indian Institute of Technology (Banaras Hindu University), Varanasi is situated in the magnificent campus of Banaras Hindu University at the southern end of the ancient city of Varanasi on the banks of the holy river Ganga. Engineering Education in Banaras Hindu University commenced in 1919 with the establishment of Banaras Engineering College (BENCO). The Institution has also pioneered engineering education by being the First in the country to start degree courses in Mining, Metallurgy, Ceramic Engineering and Pharmaceutics with the establishment of the College of Mining and Metallurgy and the College of Technology in the year 1923 and 1932 respectively. In 1969 these three colleges were amalgamated to form the Institute of Technology. The Institute of Technology, Banaras Hindu University (IT-BHU), has been converted into Indian Institute of Technology (Banaras Hindu University), Varanasi by the Government of India on 29th June, 2012. The institute aspires to be a

harbinger of modern interdisciplinary technological advancement in the country and at a forefront of imparting quality education by use of innovative pedagogy culminating traditional with contemporary methods.

Coordinators:

Prof. Sanjeev Manhas, Professor,
Department of Electronics and Communication Engineering,
Indian Institute of Technology Roorkee,
Roorkee, Uttarakhand, INDIA - 247667

and

Prof. V. N. Mishra, Professor and Head,
Department of Electronics Engineering,
Indian Institute of Technology (BHU) Varanasi,
Varanasi, Uttar Pradesh, INDIA - 221005

and

Prof. S. Jit, Professor,
Department of Electronics Engineering,
Indian Institute of Technology (BHU) Varanasi,
Varanasi, Uttar Pradesh, INDIA - 221005

and

Dr. Shivam Verma, Assistant Professor,
Department of Electronics Engineering,
Indian Institute of Technology (BHU) Varanasi,
Varanasi, Uttar Pradesh, INDIA - 221005
email: shivam.ece@iitbhu.ac.in

For more enquiries please contact:

Mobile: 7078627392, 7014681827

Email : eict@iitr.ac.in, shivam.ece@iitbhu.ac.in

Fill the following google form with scanned copies of filled-in and duly signed application form along with payment proof as attachment.

For more details about Electronics & ICT Academy, IIT Roorkee, Roorkee, please visit:
<https://eict.iitr.ac.in/>



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SPONSORSHIP CERTIFICATE

1. Name :
2. Designation :
3. Institution :
4. Email :
5. Mobile No :
- 6.

Dr. /Mr. /Ms. is an employee of our Institute/Organization and is hereby sponsored to participate in the FDP on “**Nanoelectronics: Design and Simulation**”, sponsored by Electronics & ICT Academy during 18th – 23rd May, 2020 at Indian Institute of Technology (BHU), Varanasi, U.P.

Online Transfer
Reference No:
Amount:
Bank :
Date:

Signature of Head of Institution
(with seal)

Address for correspondence

7. Address for Correspondence:

**Dr. Shivam Verma,
Assistant Professor,
Department of Electronics Engineering,
Indian Institute of Technology (BHU), Varanasi,
Varanasi-221005**

8. Educational Qualification:

9. Subjects taught so far:

Fill the following google form with scanned copies of filled-in and duly signed application form along with payment proof as attachment.

10.No. of refresher courses/workshops attended:

11. Experience (in years):

Teaching:
Research:
Industry:

Declaration

The information provided is true to the best of my knowledge. If selected, I agree to abide by the rules and regulations of the FDP and shall attend the course for the entire duration. I also undertake the responsibility to inform the Coordinator in case, I am unable to attend the course.

(If yes, please specify and attach a copy of caste certificate to claim the concession)

Note: Please carry your personal laptops.

Signature of the
Applicant