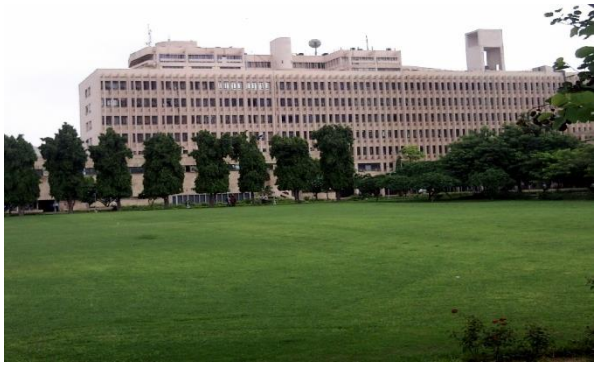
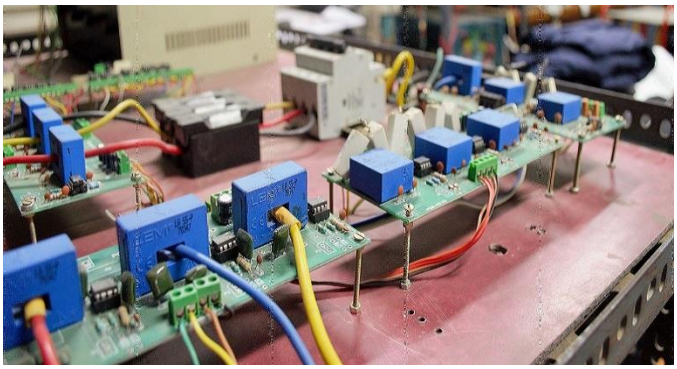
Indian Institute of Technology Delhi

TEQIP-III Sponsored 5 Day Short Term Course

Next Generation Power Converters: Design, PWM strategy and Control

IIT Delhi campus, 1st July 2019 - 5th July 2019 (5 days)





Aim of the course

The field of power electronics is changing rapidly in terms of application areas, topologies and introduction of newer generation devices. Be it renewable energy integration or operation of electric vehicles, power electronics has a vital role to play in the future. The course will cover the traditional as well as emerging power converters from fraction of a kW to GW power level, and voltages from few tens of volts to medium voltage level. It will also include the upcoming WBG devices and challenges with high frequency switching in power converters.

Course Content

The course will be covered in 5 days with the following topics:

Day 1	Introduction to power converters, PWM switching strategies, Introduction to simulation in software (MATLAB)
Day 2	Loss calculation in converters, Heat sink selection, High Frequency Non-Isolated DC-DC Converter, Hands on session on simulation of DC-DC converter
Day 3	High Frequency Isolated DC-DC Converter, Modelling and Control of DC-DC Converter, Gate Drive and Layout Considerations, Hands on session on simulation of modelling/control of DC-DC converter
Day 4	Voltage Source Converters, Multilevel converter topologies and PWM, Hands on session on simulation of Multilevel converter
Day 5	DSP/FPGA based control of power converters, Hands on session with DSP (Texas Instruments)

Learning Outcomes

At the end of the course, a participant will be able to

- Design power converters including selection of topology, gate drive circuit and thermal design.
- Control the converter through PWM switching scheme.
- Develop MATLAB models for performing simulation, verify the design and implement in a DSP/FPGA controller.
- Feel confident about the knowledge of recent progresses made in power converters.

Important Dates

The last date for the receipt of the duly filled registration form is 15th June 2019. The selected candidates will be intimated by 22nd June 2019. The course will be conducted from 1st July to 5th July 2019.

Course Faculty

The following faculty members will deliver lectures and help in simulation during the course.

- Prof. Ramkrishan Maheshwari
- Prof. Sumit Pramanick
- Prof. Soumya Shubhra Nag
- Prof. Anandarup Das

All are with Department of Electrical Engineering, IIT Delhi.

Target Audience

The course is designed for

- Faculty members in TEQIP-III institute list.
- Faculty members from non TEQIP institutes
- Research scholars working in the field of power electronics
- Industry people looking to enhance their skills

Fees and Registration

No course fee shall be charged from faculty of TEQIP-III approved institutes. For non TEQIP institutes and industries, the fee structure is given below:

- Research scholar: Rs. 10000 + 18% GST. (Excluding lodging and boarding charges)
- Faculty/Academic institute participants: Rs. 15000 + 18% GST (Excluding lodging and boarding charges)
- Industry participants: Rs. 30000 + 18% GST (Excluding lodging and boarding charges)

The registration fee includes registration kit and lunches. The fees payment should be done digitally. The bank account details are given below:

Bank Name and Address	State Bank of India, IIT Delhi, Hauz Khas, New Delhi-110016
Saving accounts Number	36819334799
IFSC code	SBIN0001077
MICR code	110002156
Account holder name	IITD CEP ACCOUNT
PAN No.	AAATI0393L

Interested candidates are requested to fill the particulars in the attached registration form. It can also be downloaded from TEQIP website of IIT Delhi (http://cepqip.iitd.ac.in/). The soft copy of the completed registration form along with digital payment receipt should be sent by email to teqip3eeiitd@gmail.com with the subject line 'Next Generation Power Converters: Design, PWM strategy and Control' latest by 15th June 2019.

On successful completion of the course, a course completion certificate will be provided.

Accommodation

The course will be held in IIT Delhi campus in the heart of New Delhi. Accommodation for participants on a twin sharing basis will be provided in IIT Guest House/Hostel/Hotels on a first come first serve basis.

Course Coordinator

Prof. Anandarup Das
Department of Electrical Engineering
IIT Delhi, Hauz Khas, New Delhi – 110016.
Phone: 011-26591269.

Any query can be sent to the email id: teqip3eeiitd@gmail.com.

Participant Registration Form

Next Generation Power Converters: Design, PWM strategy and Control

1st July 2019 - 5th July 2019

Name of applicant: ……..

Designation: ……..

Highest qualification: ……..

Date of birth (DD/MM/YYYY): ……..

Gender: Female / Male……..

AFFIX YOUR RECENT PASSPORT SIZE PHOTOGRAPH HERE

Institute/ Organization name with complete address:
……..

……..

……..

E-mail ID : …… Mobile number: ……..

Do you need accommodation: Yes / No ……

Details of fee paid: Transaction ID/DD no: ……..

Transaction date: ……

Issuing bank: ……..

I, …….. , certify that above information provided by me are correct.

(Signature of applicant with date)

Dr./Prof./Ms/Mr…….. is an employee/ a research scholar of my organisation/ institute and is permitted to attend the course on "Next Generation Power Converters: Design, PWM strategy and Control" at IIT Delhi from 1st July to 5th July 2019.

Date: _ _/_ _/_ _ _ _

(Signature of head with date and seal)