

Registration Form

An Online Short Term Course

on

**Transition in Power Electronics towards
Sustainable, Smart and Flexible Micro-Grids**

October 19th to 23rd, 2020

Department of Electrical and Electronics Engineering,
National Institute of Technology Delhi
North Delhi-110040, Delhi, INDIA

Name :

Designation :

Department :

Institute / Organization :

Qualification :

Specialization :

Mailing Address :

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Phone (M) :

E-mail :

Registration Category : Faculty / Student / Industry {^{Tick}_{Appropriate}}

Registration fee details :

Transaction No : Date :

Amount

The above information provided is true and to the best of my knowledge. If selected, I agree to abide by the rules and regulations of the course.

Date : _____ Signature of Candidate

The applicant will be permitted to participate in the above programme, if selected.

Date : _____ Signature of Sponsoring
/ Head of Deptt. with Seal



Google form link and QR code :-

<https://forms.gle/SUadENw8KWozjNr5>

Organizing Committee

Patron : Padmashri Prof. Satish Kumar, Director, NIT Delhi

Coordinator : Dr. Vivek Shrivastava, Dr. Anmol Ratna Saxena,
Dr. Manoj Kumawat, Dr. Nitin Gupta

Course Content

- Research and Development in Power Electronics under National Mission on Power Electronics Technology (NaMPET Phase-III)
- AC&DC Micro-Grids-Architecture, Design & Interfacing Aspects
- Recent Trends in Renewable Energy Sources & Technology
- Optimal energy control and challenges in Micro-Grid with renewable systems
- Power Quality Issues & Improvement Techniques in Micro-Grids
- Topologies and control algorithms for multiple inverters to operate in a Micro-Grid
- Micro-Grid protection, coordination, and safety
- Ancillary Services in a Renewable Energy Sources Connected Micro-Grid
- Demand side management in Micro-Grids
- Artificial Intelligent Application in Micro-Grids
- Applications of High-Speed Processor like dSPACE/ DSP/ FPGA. Laboratory sessions on Micro-Grid setup, PV emulators, Grid connected PV system.

Eminent Speakers

Academicians from IITs, IISc, NITs, CDAC and professionals from industries.

Advisory Committee

- Shri Arvind Kumar, Scientist G & Group Coordinator, R&D in Electronics Group, Meity, New Delhi
- Shri Tara Shanker, Sr. Director, ESDA Dn. Meity New Delhi
- Prof. Kishore Chatterjee, IIT Bombay
- Prof. Bhim Singh, IIT Delhi
- Prof. Sukumar Mishra, IIT Delhi
- Prof. S. N. Singh, IIT Kanpur
- Prof. R C Bansal, University of Sharjah
- Prof. B. K. Panigarh, IIT Delhi
- Dr. Manmohan Garg, MNIT, Jaipur
- Prof. Hemanshu Pota, UNSW Australia
- Prof. Mohd. Rizwan Khan, AMU Aligarh
- Prof. H. M. Suryavanshi, VNIT Nagpur
- Dr. Sandeep Anand, IIT Bombay
- Dr. Ragavan K, IIT Gandhinagar
- Dr. Bharat S. Rajpurohit, IIT Mandi
- Dr. Sandeep Anand, IIT Kanpur
- Dr. M. A. Mulla, SVNIT Surat
- Dr. Ashu Verma, IIT Delhi
- Dr. Naveen Jain, CTAE Udaipur
- Shri Renji V Chacko, Sr. Director, Head, Power Electronics Group, CDAC-T
- Shri. V. S. Suresh Babu, Nodal Officer, NaMPET-III, CDAC-T
- Dr. Manohar Singh, Engineering Officer, CPRI-Bangalore
- Dr. Sanjeet Dwivedi, CEG R&D Design Center, Denmark
- Prof. S. K. Panda, National University of Singapore.

NaMPET @ NIT Delhi

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Organized by



**DEPARTMENT OF ELECTRICAL & ELECTRONICS
ENGINEERING**

National Institute of Technology Delhi
IAMR Campus, Sector A-7, Institutional Area Narela
North Delhi-110 040, Delhi, INDIA
www.nitdelhi.ac.in



Under the aegis of
NaMPET Phase III
National Mission on
Power Electronics Technology

An Initiative of

Nodal Centre



Ministry of Electronics and
Information Technology
Government of India



Centre of Development of
Advanced Computing
(CDAC), Trivandrum

PREAMBLE

In the present scenario, Power Electronics' apparatus are increasing rapidly due to high efficiency as well as ease of operation and control. Role of the power electronics is interdisciplinary in nature and is used in a wide variety of applications, such as a conversion of energy, integration of renewable resources, flexible AC transmission systems, Transportation, or even the micro-grid. Therefore, a lot of emphases are going on the application of power electronics due to their versatile impact in human life, and its use is increasing globally by leaps and bounds to improve the living standards. However, a stable, protected, energy-efficient, and good supply quality integration is the mandate of the present and future electrical power system. Therefore, the importance of power electronics has grown over the years due to the demand of renewable energy. A few of these are the advent of smart power devices and the increasing global concerns about the effects of environmental pollution. Smart power devices are expected to become ubiquitous and revolutionize the way power is handled. Renewable energy offers a clean and pollution-free source of energy.

Further, the present day electricity sector is witnessing increased share of renewable energy resources (RES), intelligent sensors & controllers, and automation at different levels in the electrical system. Also, to avoid the pollution due to setting up of new power generating stations, power electronics has been called upon to ensure better utilization of existing capacity. The integration of renewable energy sources with power electronics instrument has a vast potential to meet the energy scarcity. Therefore, power electronics is the heart of these power system engineering. Hardware implementation of such Grid-interactive systems is also a challenging task due to impact of various factors. Various controllers have been used for control algorithm implementation purpose. Moreover, various factors such design of micro grid, principle of energy management, implementation of control algorithms, etc. has to cater during such integrations. Thus, this course will not only expose the participants to the recent developments of the power electronics technology in micro grid but also their hardware implementation methods to achieve above mentioned benefits.

This online STC will provide a platform for an in-depth discussion on the various opportunities, challenges, and their possible remedies towards sustainable, smart and flexible micro-grids. Moreover, the objective of this online STC is not only to discuss various aspects of power electronics in the micro-grid, but it will cover hands-on exercises of simulations and hardware implementation. This online STC is also aimed to bring the academy and technocrats on one platform to discuss common interests, challenges, and concerns that act in accordance with standards of micro-grid technology.

About National Mission on Power Electronics Technology (NaMPET)

National Mission on Power Electronics Technology - NaMPET, is a National Mission Program launched by the Ministry of Electronics

and Information Technology (MeitY), Govt. of India, with a vision to provide the country with capability to become a dominant player in power electronics technology. Through this national level R&D program, Research, Development, Deployment and Commercialization of power electronics technology is envisaged by enhancing the indigenous R&D expertise and infrastructure in the country with active participation from academic institutions and industries. CDAC-T is the Nodal Centre, coordinating the activities of NaMPET. Present third phase of NaMPET which commenced in January 2019 is focusing on technology developments in key areas such as e-mobility, smart grid, wide band gap devices etc. along with Awareness creation activities.

About the Centre for Development of Advanced Computing (CDAC)

Centre for Development of Advanced Computing, Thiruvananthapuram, CDAC-T is a Scientific Society of the Ministry of Electronics and Information Technology (MeitY), Govt. of India. The Centre has been working in application oriented research, design and development for various strategic, industrial, consumer electronics and IT systems. In this process, the Centre has acquired competency, expertise and extensive experience in the areas of Power Electronics, Control & Instrumentation, Networking, Broadcast & Communications, ASIC Design and Underwater Electronics. The Power Electronics Group, CDAC-T has been working in application-oriented research, design and development for various industrial and customer requirements for the past four decades. Power Electronics Group has expertise and experience in the areas like Wide Band Gap (WBG) device based converters for power electronics applications, Power quality solutions, Multi-port power electronics interfaces for renewable energy sources, e-Mobility subsystem developments, High voltage & high current power supplies, FPGA based multi-core digital controllers, Medium voltage drives, Power conditioner for fuel cell system, Real-time simulators, Controller for rail traction etc. The Power Electronics group has a very good industry interaction by way of transfer of technologies, field implementations etc. It has very closed association with reputed academic institutions like IISc & IITs.

About the Institute 'NIT-Delhi'

National Institute of Technology Delhi (NITD) is one of the thirty NIT (s) established in the year 2010 by an act of parliament and has been declared as an Institute of National importance. NIT Delhi is an autonomous Institute which functions under the aegis of Ministry of Human Resource Development, Government of India. It aims to provide instructions and research facilities in various disciplines of Engineering, Science and Technology, Social Sciences and Humanities for advance learning and dissemination of knowledge. The mission of NIT Delhi is to produce human resource those who are creative, competitive and innovative with high intellect and ethical values. The Institute is imparting holistic education, along with inculcating high moral values in its

students. NIT Delhi has started its academic session in 2010 with three undergraduate B. Tech degree programmes in Computer Science and Engineering, Electronics and Communication Engineering and Electrical and Electronics Engineering. The academic activities of NIT Delhi were initiated at NIT Warangal in year 2010 which later moved to a temporary campus at Dwarka, New Delhi in June 2012 and now currently running at IAMR Campus, Narela (February 2014).

About the Department of Electrical and Electronics Engineering

The Department is one of the oldest departments of the institute, offering a line blend of experience and innovation in teaching. Presently, offering an undergraduate programme in Electrical and Electronics Engineering and Post graduate studies in Power Electronics and Drives respectively. The department is home to over 40 research scholars, pursuing a Ph.D. in varied fields of electrical engineering. The department provides a life-long learning experience, through its state of art laboratories, a vast pool of courses, and industry orientation. A strong collaborative framework with reputed universities in India and abroad, the department offers ample opportunities for individual growth.

Details of Registration Fee & Online Payment

Faculty of Academic Institutes	Rs. 200/-
Students / Research Scholars	Rs. 100/-
Person from Industries	Rs. 500/-

A fee shall be paid by online Transaction in the account as below .

Account Name : Director NIT Delhi Endowment Fund
Account No. : 2983101008010
IFSC Code : CNRB0002983
Bank Name & Branch : Canara Bank, Narela, Delhi-110040

Duly filled applications need to be submitting on or before 15th October 2020. The selection is on a first come first served basis depending upon the availability of seats. Registration charges are non-refundable for selected participants. As seats are limited, so pre-registration is required by applying online at <https://forms.gle/SUadENw8KWUzjNr5>

Important Dates to Remember :

Last date of receiving Registration form : October : 15th, 2020
Confirmation of Selection by Email : October : 16th, 2020

Coordinator & Contact Person

Dr. Manoj Kumawat

Assistant Professor

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