

Registration Form

Short Term Course
on

**Real Time Implementation of
Power Electronics Converters in Grid
Integration of Renewable Energy Sources**
July 8th- 12th, 2024

Department of Electrical Engineering
MNIT Jaipur
JLN Marg, Jaipur-302 017 (Rajasthan)

Name :.....

Designation :.....

Department :.....

Institute / Organization :.....

Qualification :.....

Specialization :.....

Mailing Address :

.....

.....

Phone (M) :.....

E-mail :.....

Accommodation required? Yes/No

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

Registration fee details :

Payment mode: UPI/Net Banking

Transaction Ref. No.

Transaction Date For ₹.....

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

Organizing Committee

Patron

Prof. Narayana Prasad Padhy
Director, MNIT Jaipur

Convener

Prof. H. P. Tiwari
Professor & Head

Department of Electrical Engg., MNIT Jaipur

Co-ordinators

Dr. Nitin Gupta

Dr. Kapil Shukla

Dr. Akhilesh Mathur

Department of Electrical Engg., MNIT Jaipur

COURSE CONTENT

- Research and Development in Power Electronics NaMPET or MeiTY under National Mission on Power Electronics Technology (NaMPET Phase-III)
- Power Electronics Converters in Modern Electrical System: Architecture, Design and Interfacing Aspects
- Application of Power Electronic Converters in Grid integration of Renewable Energy Sources
- Control of Power Converters for Grid-connected and islanded operation of Renewable Energy Sources
- Power Quality Problems in Grid Integration of Renewable Energy Systems
- Modelling, Control and Pulse Width Modulation Techniques of Power Electronic Converters
- Optimal Energy Control and Challenges in Integration of Renewable Power Systems with Grid and Micro-grid
- Ancillary Services for Grid Connected Renewable Energy Systems
- Review of Optimization Techniques in Grid-integration
- Real Time Implementation/ Hardware implementation of Power Electronics Converters using high-speed processor like DSP, dSAPCE, FPGA and ARM-cortex

EMINENT SPEAKERS

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

TARGET AUDIENCE

- This short-term course is for faculty members, research scholars & PG students, and participants from Research Institutions and Industries.
- The workshop will be conducted in offline mode from July 8 to 12, 2024

NaMPET @ MNIT Jaipur

Short Term Course
on

**Real Time Implementation of
Power Electronics Converters in Grid
Integration of Renewable Energy Sources**

JULY 8th- 12th, 2024

Organized by



DEPARTMENT OF ELECTRICAL ENGINEERING
Malaviya National Institute of Technology Jaipur
J.L.N. Marg, Jaipur-302 017, Rajasthan, INDIA
www.mnit.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 for Development of
Advanced Computing
(C-DAC), Thiruvananthapuram

PREAMBLE

In recent years, a lot of emphasis is going on the Grid Integration of Renewable Energy Sources (RES) due to their versatile impact in Electrical Power System. Renewable energy offers clean and pollution-free source of energy. Solar Photovoltaic, Wind, Biomass etc. are foremost sources of energy coming under renewable and accepted as widely available RES for power generation. However, the integration of these RES to grid can be possible by Power Electronic Converters (PECs). These converters act as the interface between RES and Grid. A stable, protected, energy efficient and good supply quality integration is the mandate of the present and future electrical power system. However, increasing demand of power can be met by developing clean renewable energy resources and also by enhancing the overall efficiency of the conversion by adopting new/improved control methods. Therefore, these PECs are serving as an energy conditioning device which process and control the flow of electrical energy by supplying voltages and currents in a form that optimally suit various types of loads and associated applications. Different converters and their topologies are designed to optimize the energy conversion and distribution, to minimize harmonic distortion, to reduce cost and to have high reliability. Recent trends are also focusing on power quality issues of renewable energy systems and associated smart energy management principles. Hardware implementation of such Grid interactive systems is also a challenging task due to impact of various factors. Various controllers such as : DSPs (TMS320F28335), WAVECT FPGAs (WCU300), dSAPCE 1104, dSAPCE DS1202 MicroLabBox, ARM-Cortex Microcontrollers, etc. have been used for control algorithm implementation purpose. Various factors such as design of inverter/converter system, driver circuits, control implementation, etc. has to cater during such integrations. Thus, the objective of this STC is not only to discuss various control aspects of RES and their grid integration methods via different PECs but also their hardware implementation methods to achieve above mentioned benefits. Current technological advances and assessment in RES will be focused.

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 the 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.

Centre for Development of Advanced Computing (C-DAC), Thiruvananthapuram, a premier R&D organization under MeitY, is the Nodal Centre co-ordinating the activities of NaMPET. Ongoing third phase of NaMPET is focusing on Technology development 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 (C-DAC)

Centre for Development of Advanced Computing, Thiruvananthapuram, C-DAC 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 area of Power Electronics, Control & Instrumentation, Networking, Communications, ASIC design and Underwater Electronics. The Power Electronics Group, C-DAC has been working in application-oriented research, design and development for various industrial and customer requirements for the past four decades. The Power Electronics group has wide experience of developing successful power electronics products/systems, and a very good industry interaction by way of transfer of technology, field implementation, etc. It has very close association with reputed academic institutions like IISc, IITs, NITs, etc. CDAC has contributed significantly to the growth of industry through indigenous development of commercially viable products and systems, foreign technology absorption, consultancy, training and turnkey implementation of contract projects.

About the Institute 'MNIT Jaipur'

Malaviya National Institute of Technology (MNIT) Jaipur is one of the premier NITs, designated with the status of "Institute of National Importance" by MHRD, Govt. of India. The Institute was established in 1963, and its campus spreads over 325 acres of lush green area in the central location of pink city - Jaipur. The Institute offers undergraduate (B.Tech.) and postgraduate (M.Tech./ MBA /M.Sc. & Ph.D.) programs to about 5000 students in almost all leading engineering, technology, management, and sciences fields. Through the internationally renowned faculty, laboratories with state-of-the-art equipment, and excellent infrastructure, the Institute is actively engaged in research, consultancy, and developmental activities, besides imparting regular teaching. The institute ranked 37 nationally in the NIRF-2023 rankings and stood 6th among the 32 NITs.

About the Department of Electrical Engineering

The Department is one of the oldest departments of the institute, offering a fine blend of experience and innovation in teaching. Presently, offering under-graduate in Electrical Engineering and post-graduate studies in Power Systems, Power Electronics & Drives, and Power System Management. Department also offers Ph.D. programme in various specializations of the Electrical Engineering and related areas. The department provides a life-long learning experience, through its state of art laboratories, 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.

How to Apply/ Registration/ Course fee

Faculty of Academic Institutes	₹ 2360/-
Students / Research Scholars	₹ 1180/-
The person from Industries	₹ 4720/-
Exhibition	₹ 4720/-

Note: (1). The fees are inclusive of 18% GST, and (2). Student/ Research Scholar has to submit their Institute ID card copy.

Application in the prescribed format of registration form duly signed by the candidate and Head of the Department/ Institution along with all details including registration fee transaction number, has to submit and upload on google form.

The link of google form is as follows:

<https://forms.gle/vep4htDpfgB1mU2F7>

DETAILS OF ONLINE PAYMENT :

Account Number : 676801700388

Account Name : Registrar (Sponsored research)

Bank Name : ICICI Bank Ltd.

Branch : MNIT Jaipur IFSC Code: ICIC0006768

The registration fee will include registration kit, high tea, working lunch. The selection is on a first come first served basis depending upon the availability of seats. Registration charges are non-refundable for the selected participants.

IMPORTANT DATES TO REMEMBER

Last date of filling registration form : May 8th, 2024

Confirmation of selection by e-mail : May 10th, 2024

Course Duration : July 8th - 12th, 2024

BOARDING AND LODGING

Limited accommodations on twin-sharing basis will be available in the MNIT Guest House/ Guest Room of Hostels for the outstation participants on a chargeable basis with an advance request and subject to availability. The participants will not be paid any TA/DA.

About Jaipur City

The city of Jaipur, also known as Pink City and is the capital and largest city of Rajasthan. Jaipur has the attractions like Hawa Mahal, Amber Fort, Nahargarh Fort, Jal Mahal, Kanak Vrindavan Valley, City Palace, Jantar Mantar, Albert Hall Museum, Sisodia Rani Garden, Govind Devji Temple, Birla Temple, and many more. It is a bustling trading center with colorfully set bazaars, people sporting blood-red turbans, puppet sellers, festivals and fairs.

How to Reach Us

Road, rail and air services well connect Jaipur. It is about 250 kms from Delhi International Airport. MNIT Jaipur is situated on JLN Marg and is about 9 kms each from the main railway station of Jaipur and Central Bus Stand (Sindhi Camp). Jaipur International Airport is about 3 kms away from the Institute.

Coordinator & Contact Person

Dr. Nitin Gupta

Associate Professor

Department of Electrical Engineering

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