

Short term Course
On
Power Electronics Systems and
Applications

[PESA-14]

April 04-06, 2014



Organized by

Department of Electrical Engineering
National Institute of Technology
Rourkela
Odisha, India



Under the aegis of



NaMPET
National Mission on Power Electronics
Technology (phase-II)
Department of Electronics & Information
Technology
Government of India
Nodal Centre
Centre for Development of Advanced Computing
Thiruvananthapuram, Kerala, India

NIT, Rourkela: National Institute of Technology (NIT), Rourkela was founded as Regional Engineering College, Rourkela in 1961. It is a prestigious Institute with a reputation for excellence at both undergraduate and postgraduate levels, fostering the spirit of national integration among the students, a close interaction with industry and a strong emphasis on research, both basic and applied.

Dept. of EE: Department of Electrical Engineering was established in 1961. Since its inception, the Department is under dynamic progress and is reputed for imparting quality education both at B. Tech, M. Tech levels. The Department currently runs four M. Tech programs with the specializations in (i) Power Electronics and Drives, (ii) Control and Automation, (iii) Industrial Electronics, (iv) Electronic Systems and Communication. Besides, a good number of research scholars are working towards the PhD degree. The Department has well equipped with modern laboratories such as Power Electronics and Drives Lab., Machines Lab, Power System Lab., Control & Robotics Lab., Signal Processing & Communication Lab, Embedded Systems & Real-Time Lab. and Soft Computing Lab. for pursuing research in the emerging areas of Electrical Engineering.

About National Mission of Power Electronics Technology (NaMPET)

Power Electronics plays a very important role in any country's industrial economy. Identifying it's positive effects on many factors like increase in productivity and quality, improvement in energy efficiency and quality of power systems, environment friendly power generation and mass transportation systems, Department of Electronics & Information Technology (DeitY) has launched the programme National Mission on Power Electronics Technology (NaMPET) with the vision of making India a dominant player in Power Electronics at the international level. CDAC Trivandrum is the Nodal Centre for this programme. NaMPET is a multi-institutional programme facilitates Research, Development, Deployment and Commercialization of Power Electronics Technology, by ensuring participation of academics, R&D and industry. (For more details www.nampet.in)

About Center for Development of Advanced Computing (C-DAC)

C-DAC undertakes application oriented research, design and development in electronics so as to generate state-of-the-art producible, marketable and field maintainable products and systems. 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 institution like IISc, IITs, NITs etc. The C-DAC has contributed significantly to the growth of industry through indigenous development of commercially viable products and systems, foreign technology absorption, consultancy and training and turnkey implementation of contract projects. The center has several firsts to its credit and is the recipient of prestigious national awards for excellence in application oriented R&D.

Speakers

Academician from IITs, NITs, CDAC and professionals from Industries will deliver lectures.

Organizing committee

Patron: Prof. S. K. Sarangi, Director

Coordinators: Prof. A. K. Panda

Prof. S. Karmakar

Prof. S. Gopalkrishna

Advisory committee

Prof. H.P.Khincha, Advisor, IISc & Former VC, VTU

Prof. Bhim Singh, EE Dept. IIT, Delhi

Mr. R.C.Meharde Senior Director, DeitY, Delhi

Mr. TaraShanker, Director, DeitY, Delhi

Dr. Z V Lakaparampil, Head PEG, CDAC

Prof. Chandan Chakravorty, IIT Kharagpur

Prof. D. Das, IIT Kharagpur

Prof. S.P. Singh, IIT Roorkee

Prof. Sukumar Mishra, IIT Delhi

Prof. Ashok Pradhan, IIT Kharagpur

Prof. H.M. Suryawanshi, NIT Nagpur

Mr. V.S. Suresh Babu, Nodal officer, NaMPET, CDAC

Prof. P.C. Panda, NIT Rourkela

Prof. J.K. Satapathy, NIT Rourkela

Prof. B. Sbudhi, NIT Rourkela

Prof. S.K. Patel, NIT Rourkela

Prof. K.B. Mohanty NIT Rourkela

Prof. S. Das, NIT Rourkela

Prof. D. Patra NIT Rourkela

Prof. P.K. Sahu NIT Rourkela

Prof. S. Mohanty, NIT Rourkela

Prof. K.R. Subashini, NIT Rourkela

Prof. S. Ghosh, NIT Rourkela

Prof. S. Maity, NIT Rourkela

Prof. P.K. Ray, NIT Rourkela

Prof. S. Samanta, NIT Rourkela

Prof. S. Gupta, NIT Rourkela

Prof. M. Pattanaik, NIT Rourkela

Preamble

Power electronics is interdisciplinary in nature and is used in a wide variety of industries from computers to chemical plants to rolling mills. The importance of power electronics has grown over the years due to several factors. Two 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. Electric vehicle is currently looked upon as a promising solution to curb urban pollution. 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. This has resulted in research into active power factor correction, harmonic compensation etc., assuming great significance.

This course is designed to address applications of power electronics in the industry related to Converter Topology, Electric Drives, Power System, VAR compensation, Micro Grid etc. This course will offer a unique opportunity to the researchers, practicing engineers, academicians and research students working in the relevant topics in Power Electronics applications to come closer through theoretical sessions and laboratory-based experiments/ demonstrations. Professionals from academic institutes, R&D labs, user agencies like steel, railways, defense etc., and manufacturing industries in the country are welcome to participate in this short term course. This event is structured to give a wide exposure on the applications of power electronics and technology trends.

Course content

Theory Coverage

- Basics of data acquisition and LabVIEW
- Active filter, Power quality issues and Harmonic mitigations
- DC-DC converters topology and there control strategies
- Advanced machine drives
- Multilevel inverter and applications
- Online monitoring of HV Equipments
- Micro Grid

Laboratory Experiments

- Electrical drives: Induction motor, BLDC, PMSM, SRM
- Multilevel inverters and applications
- Virtual instrument based measurement

Registration Fee

- Professionals from Industry & R&D Units: Rs. 3000/-
- Faculty members from universities/institutes: Rs. 2000/-
- Students/research scholars: Rs.1000/-

(The course fee includes course material and working launch)

Important Dates

Last date for registration: **1st March, 2014**

[Complete application should be received by the coordinator by this date]

Selection intimation to the applicant: **5th March, 2014**

Boarding and Lodging

Accommodation on twin share basis can be arranged in the institute guest houses subject to availability and on prior payment.

Room tariff:

Twin sharing per person per day: South Block: Rs.250/- and North Block: Rs.150/-

Program Coordinator

Dr. A. K. Panda

Professor & Head

Department of Electrical Engineering,
NIT Rourkela, Rourkela-769008, Odisha

Phone- 0661-2462407

Email:

akpanda.ee@gmail.com

akpanda@nitrkl.ac.in

Mobile: +91-9437369341

Short Term Course on Power Electronics Systems and Applications

[PESA-14]

04th – 06th April, 2014

Registration Form

Please complete the details below and mail along with the registration fee.

1. Name (Mr./Ms): _____

2. Category: Ademic/Industry/Student

[For registration as student, please enclose a bonafide certificate from parent institution]

3. Organization: _____

4. Address: _____

5. Tel. Nos (Mob): _____

6. E.mail ID: _____

7. Highest Acad. Qualification: _____

8. Bank Draft No.: _____ Dt. _____ amounting

Rs. _____ drawn on _____

9. Accomodation Required:

Yes

No

Important: All payments should be made through A/C payee demand draft drawn in favor of "*Continuing Education, NIT Rourkela*" payable at SBI, NIT campus branch, Rourkela (Code-2109) and sent to the course co-ordinator.