

## INTRODUCTION

With fast developments in semiconductor technology, high performance power electronic devices and signal processors are getting commercialized regularly. Consequently power electronics, machine drives and power system technology are advancing very fast. So there is necessity of updating the knowledge with state-of-the-art developments in these fields. This training program will help the participants to update their knowledge.

## COURSE CONTENTS

Introduction to high power converters, PWM converters, different PWM techniques: space vector PWM, three level and multi level converters, soft switched converters.

Introduction to dc and ac motor drives, dynamic d-q model of ac machines, slip power recovery drives, control and estimation of induction motor drives, direct and indirect vector control; stator flux, rotor flux, and airgap flux orientation; sensorless vector control, direct torque control, sliding mode control and fuzzy control of induction motor drives, control and estimation in synchronous machines, switched reluctance motor drives, PLL drives.

Power quality issues, series and shunt compensation, FACTS, STATCOM, DVR, UPFC; active and reactive power control.

## THE INSTITUTE AND DEPARTMENT OF ELECTRICAL ENGINEERING

NIT Rourkela has made a rapid progress as an Institute of higher learning, in the last decade. 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 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.

## WHO SHOULD ATTEND

All practicing engineers/ technicians working in private, public, government organizations/ industries, scientists/ engineers from R&D establishments, faculties, research scholars and students from engineering institutions are eligible to apply.

## COURSE FEE

Professionals from Industry, R&D units: Rs. 9,000/-  
Faculty from Academic Institutions: Rs. 6,000/-  
Students/Research Scholars: Rs. 4,000/-  
The course fee includes course material and working launch.

## MODE OF PAYMENT

All payments should be made through A/C payee demand draft drawn in favour of **"Continuing Education, NIT Rourkela"** payable at **SBI, NIT campus branch, Rourkela (Code-2109)**.

## 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 (May change without notice).

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

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

Breakfast and dinner can be availed in the guest house/student Hostels on payment.

There are also many good hotels in Rourkela; the same can be booked on request and prior payment.

### **IMPORTANT DATES**

Last date of registration: **16 June 2014**

Selection intimation to the applicant:

**16 June 2014**

Course date: **23<sup>rd</sup> to 27<sup>th</sup> June 2016**

### **PROGRAM COORDINATOR**

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### **Recent Trends in Power Electronics, Drives and Power Quality , June 23 – 27, 2014**

1. Name:
2. Highest qualification:
3. Designation:
4. Organization:
5. Date of Birth:
6. Father's Name:
7. Address:
8. Phone/ Mobile (must):
9. E-mail (must):
10. Accommodation required: YES / NO
11. If accommodation required, it should be in GUEST HOUSE or STUDENT HOSTEL?
12. Details of registration fee:  
Amount:  
DD No.:  
Date:  
  
Date

Signature

### **SHORT TERM COURSE ON RECENT TRENDS IN POWER ELECTRONICS, DRIVES AND POWER QUALITY JUNE 23 – 27, 2014**



**DEPARTMENT OF ELECTRICAL ENGINEERING  
NIT ROURKELA**

