National Institute of Technology Rourkela
राष्ट्रीय प्रौद्योगिकी संस्थान राउरकेला
ଜାତୀୟ ପ୍ରଯୁକ୍ତି ପ୍ରତିଷ୍ଠାନ ରାଉରକେଲା

An Institute of National Importance

SERB Sponsored
5 Days Short Term Course
on
Diagnostic Monitoring of High Voltage Power Equipment
(DMHVPE-2024)
November 12-16, 2024
Hybrid Mode (Virtual and Physical Mode)

Overview of Course

With the increase of population throughout the world, electrical power demand is also increasing rapidly to survive the modern civilization in a better fashion. To meet such increasing demand there are several interconnected power system networks are commissioning both in our country and as well as abroad. It is well known that each of the power system networks have several transformer, CT, PT, circuit breaker, etc. either in transmission or distribution side which plays an important role in it. At the same time these power system equipment are facing different types of thermal and electrical tress during their operation throughout their service period of life which leads catastrophic failure of such equipment, hence failure in power system network. However, intensive care is adopted to such important equipment to protect it from external and internal faults. The condition assessment process starts with the continuous or periodic condition monitoring of the asset with help of IoT devices and sensors. IoT sensors continuously analyses or collect the data of the asset on the basis of minutes, hours, days, months (as per the requirements). It computes and stores the data of the parameters of the transformer to the storage cloud. From that cloud, the concerned person gets this data regularly.

In India, the availability of the solid, liquid and gaseous insulation manufacturing organizations and the technology are well developed to supply the demand but the monitoring technology of such insulations are not that much well developed. Now a day's computer based on-line diagnostic monitoring of partial discharges are more popular in the field of high voltage engineering. Presently, the development of the condition monitoring technology is in nascent stage in India. However, some of the developed countries like USA, Japan, and Germany etc. are continuously working for developing a well-established technology for detecting the partial discharges inside the high voltage power system equipment at very early stage. Therefore, in view of the above an attempt has been taken here for advance understanding of on-line diagnostic monitoring system to detect the different failure activity inside the high voltage power system equipment.

The diagnostic monitoring and alarm systems are increasingly installed in order to reduce the operational costs and to extend the reliability and safety of the high voltage power system equipment and system operation. Therefore, on-line diagnostic monitoring of such power system equipment from the remote place is very much essential in the field of the quality control and of condition-based maintenance for its reliable operation.

About NIT Rourkela

NIT Rourkela is one of the premier national level institutions for technical education in the country and is funded by the Government of India. Government of India has elevated the Regional Engineering College, Rourkela to a deemed university under the name of National Institute of Technology, Rourkela. The main objective of the Institute is to produce quality Engineers and Scientists in Graduate and Post-Graduate levels in various branches of Engineering and Science. The Institute is managed by the Board of Governors of National Institute of Technology (Rourkela) Society and vested with significant degree of administrative and financial autonomy. Government of India have recognized the Institute as a premier institution of repute and have developed it as a center of excellence under plan funding. The campus of the Institute consisting of the Institute buildings, halls of residence and staff colony is situated at the eastern end of Rourkela steel city, beyond Sector-1 over an area of 262 hectares of land provided by the Government of Orissa. It is a residential campus offering accommodation to faculty, staff and students. The campus has all the amenities for developing personal, social and academic skills of the student community.

About Department of Electrical Engineering

The Department of Electrical Engineering has been one of the first disciplines to be taught at NIT Rourkela and has been a pillar of strength in the engineering community of the institute. With the enthusiastic participation of faculty and students, it has been a center of excellence in academics and research development.

The department hosts Centers of Excellence in Industrial Electronics & Robotics and Renewable Energy Systems with participating faculties from various other departments to boost interdisciplinary research. It covers some emerging and challenging topics such as Artificial Neural Networks and Soft Computing in EE, Nonlinear Control and Modelling of Power Converters, Wireless Technologies, Robotics, and Computer Vision. It facilitates the students to hands knowledge on modern-day relevant technologies with well-equipped labs such as Soft Computing Lab, Control and Robotics Lab, High Voltage Lab, Power Electronics Lab, and Embedded Systems lab. For details of the Department of Electrical Engineering, please visit in the link: https://www.nitrkl.ac.in/EE

Course Highlights

- To educate participants about Diagnostic Monitoring of Power Equipment.
- Make participants aware of the current challenges in power system network and possible solutions.
- A conclave for industrial and academic experts.
- Importance and role of different techniques for condition assessment.
- Expert lecture by eminent academician from IITs, NITs as well as other universities and Industry experts.
- Excellent opportunity for collaboration.

Key Speakers

- Prof. Shakthi Prasad D, IIT Goa
- Prof. Ashis Parmane, NIT Silchar
- Prof. Apeksha Madhukar, IIT Goa
- Prof. Palash Mishra, NIT Warangle
- Prof. Saurav Pramanik, IIT Kgp
- Prof. Josef Pihera, University of West Bohemia
- Prof. Asha Sharma, IIT Roorkee
- Prof. C. C Reddy, IIT Ropar
- Prof. Subrata Karmakar, NIT Rourkela
- Dr. Rohith Sangineni (M/s Hitachi Energy, Sweden)
- Dr. Birender singh (M/s Nexans Cables, Norway)

Session Covered

Session I: 9:00 AM – 1:00 PM; Tea Break: 11:00 AM – 11:30 AM; Lunch: 1:00 PM – 2:00 PM

and

Session II: 2:30 PM – 5:30 PM; Tea: 5:30 PM – 6:00 PM

- Basics of condition Monitoring
- Introduction of generation and measurement of testing voltages
- Interconnection of HV power system components
- Problems with offline condition monitoring,

- Fault identification of power system network
- Insulating materials utilized in power system equipment
- Online condition monitoring techniques of power system equipment
- Testing of power system equipment
- Noise-mitigation, Non-electrical online condition monitoring
- Application of AI and ML techniques for condition assessment
- Role of power electronics devices for condition monitoring of renewable energy sources
- Direct Power Control of Active Front End Rectifiers
- Power quality issues and mitigation in power system network
- FACTS

Fees Structure

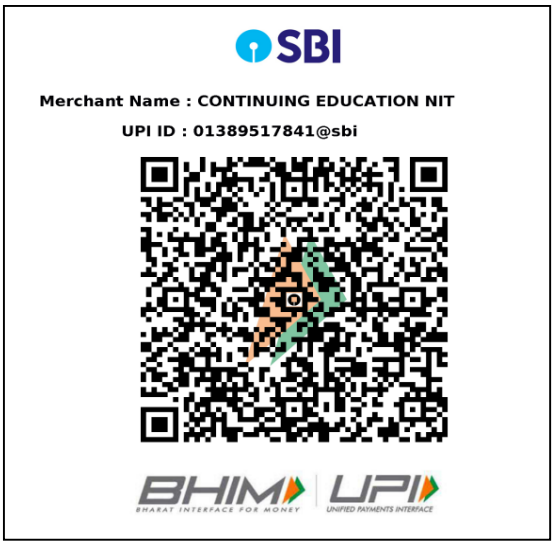
Hydride Mode Registration fees (Including GST):

- UG/PG Students: 750/-
- Research Scholars: Rs. 1000/-
- Professionals from Academia: Rs. 2000/-
- Professionals from Industry: Rs. 3000/-
- Participants from abroad: US $80

*Registration fee includes Course Kit only. **Food and Accommodation is not included** in the registration fees. Professionals from the Academia/Industries will be provided with Guest House facility, if available, on payment basis. There are also many budget friendly hotels are available in Rourkela.
Limited (10 nos.) outside participants will provide free, Accommodation and Food.
No registration fee required for students / staffs of NIT Rourkela
Confirmation to participants: 9th November, 2024
Online platform details and detail program schedule will be intimated by: 10th November, 2024

Fee Payment Details

The registration fees can be paid directly by account transfer through NEFT/RTGS/IMPS using following Bank details given below.
Branch name: SBI, NIT Campus, Rourkela
IFSC code: SBIN0002109
Account Name: CONTINUING EDUCATION NIT ROURKELA
Account Number: 10138951784
MICR No: 76 9002 007
SWIFT Code: SBININBB137
UPI ID: 01389517841@sbi



Important Dates

Registration Opens: Wednesday, October 30, 2024
Last date for registration: Friday, 8th November, 2024.
Event date: November 12-16, 2024.

Advisory Committee

Prof. K. Umamaheshwar Rao
Director
National Institute of Technology Rourkela

Prof. K. B. Mohanty
HOD, Department of Electrical Engineering,
National Institute of Technology Rourkela

Local Organizing Committee

Course Coordinators

Dr. Subrata Karmakar
Professor
Department of Electrical Engineering
National Institute of Technology Rourkela

Who can apply

Interested participants can apply through Google form link:
Participants:

I. UG/PG Students
II. Research Scholars
III. Academia
IV. Industry Personnel

The successful participants who will attend the whole course will be given participation e-certificate.

How to Reach NIT Rourkela

By Air

There is no commercial air strip in Rourkela; however Steel Authority of India Limited has an airport that is routinely used for charter flights and private aircrafts. Major airports in the proximity of Rourkela are Ranchi, Bhubaneswar, Kolkata and Raipur as per details given below:

Airport	Rail Distance from Rourkela / Journey time	Road distance from Rourkela / Journey time
Jharsuguda	135 Km, 1 hrs 30 mins	135 Km, 2hrs 30 mins
Kolkata	413 Km, 6 hrs	525 Km, 9hrs
Bhubaneswar	462 Km, 7 hrs	320 Km, 5hrs
Ranchi	166 Km, 3 hrs 30 minutes	222 Km, 4hrs
Raipur	417 Km, 6 hrs 30 mins	448 Km, 6hrs 30 mins

By Train

Rourkela railway station is 7 km away from the NIT campus. The Howrah-Mumbai line and Ranchi-Bhubaneswar line passes through this city.

By Road

Rourkela is well connected by State Highway no. 10 and National Highway no. 23. It connects to the cities like Ranchi, Raipur, Sambalpur, Bhubaneswar etc.

How to Reach NIT

Rourkela railway station is situated 7 km away from the NIT campus. Autos/taxis are available round the clock there. Local transport facility is also available from nearby state and private bus terminus.

Registration Form

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November 12-16, 2024
Department of Electrical Engineering
National institute of Technology, Rourkela-769008, Odisha.

Name* (Prof./Dr./Mr./Mrs./Ms.): _____

Date of Birth (DD/MM/YYY): _____

Sex: Male/ Female: _____

Designation*: _____

Organization*: _____

Department*: _____

E-mail*: _____

Postal Address for correspondence*: _____

_____

Mobile number (only 10 digits)*: _____

WhatsApp number: _____

Particulars of Registration Fee:

DD/UTR No: _____Date: _____

Name of the Bank and branch:

Date: _____Signature: _____

*: mandatory field

No need to fill this in hard copy, after payment please submit the above mentioned information through a google form having the link: https://forms.gle/AwpdCRHckSPQrda3A

Scan QR code to register.

Contact us

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