

Self-sponsored 5 days Short Term
Training Program
(Online mode)
on

“Power System and Power Electronics
Research, Applications and Real-Time
Simulation (PSPERARTS)”

From
21th December to 25th December, 2024

REGISTRATION FORM

Name:

Designation:

Organization:

Qualification:

Correspondence Address:

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Training Program
on

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Organized by

Department of Electrical Engineering



Technically Sponsored by IEEE Power
Electronics Society and IEEE Industrial
Electronics Society MP Section
and
National Institute of Technology
Raipur- 492010 (Chhattisgarh)

About the Institute:

National Institute of Technology Raipur situated in the capital of Chhattisgarh, has proven to be 'avant-grade' in the field of science and technology over past few decades in this region. With sweet memory of foundation ceremony by our president Hon'ble Dr. Rajendra Prasad on 14th September 1956. the institute started with two departments namely Metallurgical and Mining Engineering. Later the inauguration of the Institute building was done by our Prime Minister Hon'ble Pt. Jawahar Lal Nehru on 14th March 1963. From 1st December 2005, the institute has become the National Institute of Technology. It is well connected with Mumbai, Delhi and all metro cities by regular flights and is on the main Howrah-Mumbai railway route. The institute is 5 km from the Raipur railways station and 18 km from airport on NH-6, the Great Eastern Road.

About Department:

- The Department of Electrical Engineering came in existence since 1958.
- National level research projects are sanctioned.
- National and International research papers are contributed by all faculty members every year.
- Offers undergraduate as well as postgraduate programs.
- The department provides an outstanding research environment and offers academic program leading to the award of Ph.D. degree.

Venue:

**Department of Electrical Engineering
NIT Raipur (CG) – 492 010, INDIA**

Objectives:

The main objectives of this STTP are to provide an online platform for participants to engage with experts from IITs, NITs, and industry and to gain knowledge on modelling and simulating modern advanced electrical systems for their future research endeavors. Participants will also have the opportunity to learn:

- **Modelling Cyber-Physical Systems:** Understanding the integration of physical systems with computational and network components.
- **Working with HIL, Opal-RT, and RTDS:** Online training on advanced hardware-in-the-loop systems, real-time digital simulators, and tools for developing and testing electrical systems.
- **Developing AI/ML and Optimization-based Solutions:** Enhancing problem-solving skills with practical training to implement artificial intelligence, machine learning, and optimization techniques tailored to electrical systems.

THEME / SCOPE

The short-term training programme (STTP) on “**Self-sponsored 5 days Short Term Training Program (online mode)**” is proposed to give a thorough exposure to the recent research trends, and analytical analysis in the field of power systems, power electronics and renewable energy. Distinguishing features of this programme include expert lectures on field and future technological advancement. The proposed STTP will provide opportunity to faculty, engineers, and utility/industrial personnel to know the latest advancement in modern power network includes renewable resources. The programme will also focus on the challenges to be taken by the researchers from power system, power electronics, and high voltage issues, cyber security in smart grid, application of ML techniques in power system and when applied to the system connected with distributed generation. The course will also cover the detailed discussion about the hybrid microgrid system.

Topics to be covered:

- Reconfiguration fault tolerant converters for hybrid power applications
- Real time closed loop control of BLDC motor
- Modelling & simulation of EV System
- AI/ML Application
- Hands on optimization: solving electrical problems using a population search based algorithm (MATLAB coding)
- Development of hardware in the loop cyber physical smart grid testbed
- Power hardware in the loop simulation of grid connected inverter
- Cyberattack detection for reliable distance relay operation RTDS
- Opal-RT for power electronics
- Inertia monitoring: industry practices and research activities
- Condition monitoring of machines to meet industrial revolution 5.0

Registration Fee Details (in INR):

Participants	Amount (in Rs)
Students/ Research Scholars/ Contract Faculty	500/-+18%GST=Rs 590/-
Faculty/ Industry Delegates	2000/-+18%GST=Rs 2360/-

ACCOUNT DETAILS

Account Name: Director NIT Raipur

Account No.: 38027633250

Bank Name: State Bank of India,
NIT Raipur Branch

IFSC Code: SBIN0002852

Online payment of fee (proof with transaction no.) with filled registration/Google form (<https://forms.gle/KZoiZ4DFWYfKAJcP6>)

must be forwarded to mbiswal.ele@nitrr.ac.in. The subject matter of the mail should be “**STTP** on **PSPERARTS**. Fee is non-refundable. Selected candidate will be informed by email as per the schedule. Certificates will be issued to the participants only after attending the complete course.