

**One Day Research Facility Training
Programme under SERB-
DST Project Titled “Development of
Intelligent Controllers for Back-
EMF-Based Position Sensorless
Brushless DC Motor Drives
Employed in Solar Photovoltaic
Water Pumping Systems”**

on 11th January 2024

REGISTRATION FORM

Name:

Designation:

Organization:

Qualification:

Correspondence Address:

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Tel. (O) (R)

(M)

E-Mail:

No registration fee.

Registration on first come first serve basis.

Fill the Google forms for registration:

<https://forms.gle/AsYrb4LdNDACHVPX9>

Signature

Chief Patron

Dr. N V Ramana Rao

Director,

National Institute of Technology, Raipur

Patron

Dr. P. Diwan

Dean R&C,

National Institute of Technology, Raipur

Chairperson

Dr. Anamika Yadav,

Head, Dept. of Electrical Engineering,

National Institute of Technology, Raipur

Coordinator

Dr. Rajan Kumar

Dept. of Electrical Engineering

IMPORTANT DATES

Last date of registration: 08/01/2024

Confirmation to the participants:

09/01/2024

Program date: 11/01/2024

Address for Correspondence:

Dr. Rajan Kumar

Assistant Professor

Dept of Electrical Engineering

National Institute of Technology

Raipur-492010 (CG)

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**One Day Research Facility Training
Programme under SERB-
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Sponsored by



**Science and Engineering Research
Board
(A statutory body under DST, Govt.
of INDIA)**

(Scientific Social Responsibility (SSR) policy of
SERB)

on 11th January 2024



Organized by

Dr. Rajan Kumar

Principal Investigator

(SRG/2021/000255)

Assistant Professor

Department of Electrical Engineering

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 Engg. came in existence in 1958 at NIT Raipur.
- ❑ Department offers academic programs like B.Tech, M.Tech. and Ph.D.
- ❑ Present intake of UG Program is 115 and PG program is 30.
- ❑ Research activities are conducted regularly.

Venue:

Department of Electrical Engineering,
NIT Raipur (CG) – 492010, INDIA

Objectives:

The primary objective of this program is to motivate the researchers and end users towards energy conservation through the application of renewable energy systems such as solar photovoltaic technology. The middle class farmers and household consumers of India are facing many problems for irrigation and drinking water supply. The utilization of solar photovoltaic (PV) energy in water pumping is conservative particularly in isolated regions where the transmission of power is either impractical or exorbitant.

In this program, various topologies for solar PV array fed water pumping are to be covered using a brushless DC (BLDC) motor drive. A high efficiency BLDC motor substantially reduces the size of PV array and hence its installation cost. Moreover, its high power factor results in a reduced capacity of the used voltage source inverter (VSI). Besides these, unlike an induction motor, the speed of a BLDC motor is not limited by power frequency.

The hands on training will also be provide to the participants using MATLAB simulation / experimental setup.

The programme is also meant to support motivated researchers, PG and PhD level students, who are having a strong willingness to get excellence in their scientific and engineering research pursuits.

Topics to be covered:

1. Solar PV Energy Generation System for water pumping
2. Maximum power point tracking
3. Brushless DC Motor Control
4. Converters for PV Applications
5. Hands on training on simulation/experimental setup

Targeted Participants:

Eligibility Criteria to Attend: The training programme is open to researchers, JRF, SRF, PG and PhD research scholars. Selection shall be on first come first serve basis, with preference to students whose research interests align with the theme of the training programme and allied fields. Total number of seats is limited to maximum 20 researchers.

List of participants will be displayed on the institute website or informed through email.

The applicants have to submit the registration form in the attached format at the link:

<https://forms.gle/AsYrb4LdNDAchVPX9>

There is no registration fees.

Registration is by first come first serve basis.