

SHORT-TERM COURSE ON Solar Photovoltaic

Research Fundamentals and
Possible ways forward

11th - 15th March, 2019



Organized by

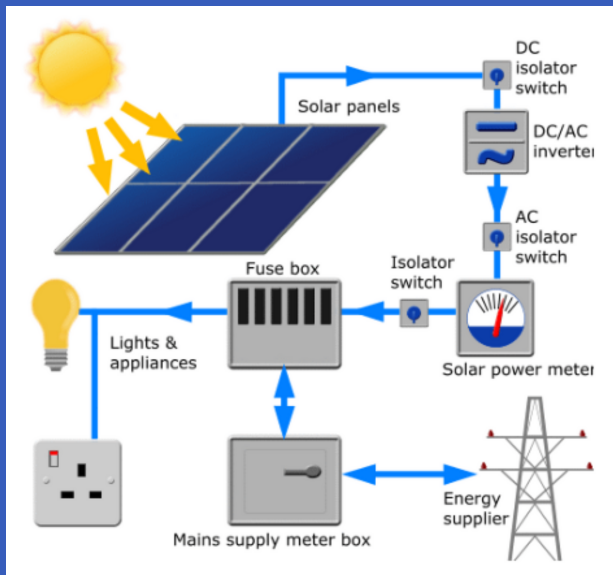
Center of Excellence for
Renewable Energy
School of Electrical
Sciences

**NATIONAL INSTITUTE OF
SCIENCE AND TECHNOLOGY
(AUTONOMOUS)**

**BERHAMPUR- 761008, ODISHA,
INDIA**

SOLAR PHOTOVOLTAIC

With increasing stress on fossil fuel based energy resources and their impact on climate change there is strong need for alternative energy solutions. For India, solar energy solutions are becoming increasingly viable option particularly due to favourable policies of the government. With the National Solar Mission target of 100,000 MW of solar power installation in the country, there is great demand of skilled manpower in the country. It is estimated that as much as 300,000 people need to be employed at various levels from technician to scientists in India by 2022 to meet the installation target. A photovoltaic system, also PV system or solar power system is a power system designed to supply usable solar power by means of photovoltaic. It consists of an arrangement of several components, including solar panels to absorb and convert sunlight into electricity, a solar inverter to change the electric current from DC to AC, as well as mounting, cabling, and other electrical accessories to set up a working system. This course with the title “Solar Photovoltaic: Fundamentals and Possible ways forward” is designed to address current topics of research and development in PV based electricity generation.



COURSE CONTENT

The aim of organizers is to provide introduction to various aspects of solar photovoltaic (PV) technologies. The course is designed in a manner that any engineering postgraduate without background in solar photovoltaic can attend and understand. The detail course content is as follows:

- Measurement and analysis of solar PV module parameters & characterization.
- Site Evaluation, Roof top PV sizing,
- Connecting module in different arrays, Series, parallel and series-parallel connections and its effect on Voc and Isc. Importance of connecting same type of module in an array.
- Design of solar PV systems for both grid connected and off-grid systems, kW and MW power plant design, case study of PV system design and installation.
- Life cycle cost analysis of solar PV systems and its comparison with grid electricity.
- Probabilistic Power System steady state forecasting.
- Allowable PV penetration into power systems through risk assessment.
- Smart inverter topologies for integration of PV with the grid.
- Implementation of the above topics in MATLAB/SIMULINK platform

COURSE MATERIALS:

Each registered participant will be provided with a set of comprehensive lecture notes at the beginning of each day.

WHO MAY BENEFIT:

The course would benefit anybody who wants to work with solar photovoltaic (PV) technologies, particularly postgraduate in Power system, Power electronics, Energy System working as faculty or research scholar.

ABOUT NIST (AUTONOMOUS)

NIST was established in the year 1996 led by technocrats cum academicians educated in the top institutes of India & abroad with the aim "To create Engineering minds capable of mastering the global challenges of tomorrow's technology" by promoting higher technical education. NIST flourished under the dynamic leadership of its founder Chairman, Director, and the Placement Director. NIST is a premier institute of technology in India, imparting quality engineering and science education both at undergraduate and postgraduate levels. NIST is accredited by UGC-NAAC with "A" grade with a high score of 3.22 out of 4 and it is the endeavor of the Institute to expose the students and faculty to the state of the art advancements in various aspects of science and technology. NIST is among the most desirable and respected institutes in the state of Odisha and country. We at NIST are not only focused on providing the highest standard of education in broad academic curriculum for undergraduate, graduate, and post graduate studies starting from engineering, science to management and research programs in broad areas, but also are committed to create innovative minds, successful professionals, and entrepreneurs to meet the challenges of tomorrow's world.

ABOUT SCHOOL OF ELECTRICAL SCIENCES

Since, inception the School of Electrical Sciences of NIST, Berhampur offers programmes leading to Bachelor's Degree, Master's Degree as well as Ph.D. The four year undergraduate programme leads to the Bachelor of Technology (B.Tech) degree in EEE and EE. Specializations for the Master's level programme is in Power Systems. The research programme in Electrical Engineering, Control Systems, Renewable Energy System, Smart Grid and other related areas leads to the PhD degree awarded by the university. In addition to these regular programmes, the department is also actively involved in conducting FDPs, job-oriented short-term training programmes, continuing education programmes for engineering professionals and academic faculty. The faculties are involved in collaborative research programmes with many research laboratories / institutes in India and abroad funded by DST, AICTE, etc

COURSE COORDINATORS:

Dr. S. K. Pradhan
Assoc. Prof. and Head,
School of Elect. Sciences,
NIST, Berhampur

Prof. B. P. Pattanaik
Associate Professor
School of Elect. Sciences,
NIST, Berhampur

Prof. B Rajanarayan Prusty
Assistant Professor
School of Electrical Sciences,
NIST, Berhampur

REGISTRATION FEES:

- Rs.3,500.00 for teachers from universities/ colleges.
- Rs.4,500.00 for people from industry.
- Rs.2,000.00 for students/research scholars

[Please enclose a bona-fide certificate from parent institution].

IMPORTANT DATES:

Last date for registration up to **9th Mar, 2019**
[Complete application should be received by the coordinator by this date]

HOW TO APPLY:

Interested candidates may apply in the format given herewith along with the registration fee, paid through a demand draft drawn in favor of 'National Institute of Science and Technology' and payable at Berhampur. The number of seats are limited and thus candidates are advised to register early.

Point of Contact:

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Registration Form:

Please complete the details below and mail along with the registration fee to the Point of contact.

1. Name (Mr./Ms) : _____
Category: Academic/Industry/Student
[For registration as student, please enclose a bona-fide certificate from parent institution.]
2. Organization: _____
3. Address: _____
4. Tel. Nos (O, R, CP): _____
5. Email ID: _____
6. Highest Acad. Qualification: _____
7. Veg. / Non-Veg.: _____
8. Bank Draft No. : _____, Dt. _____
9. amounting Rs. _____ drawn on _____