भारतीय प्रौद्योगिकी संस्थान गुवाहाटी
Indian Institute of Technology Guwahati

Short Term Course

Advanced Solar Collectors

June 05th -09th, 2020

Conducted by :
Centre for Energy

Organized by :
Knowledge Incubation for TEQIP
Centre for Educational Technology
URL: http://www.iitg.ac.in/cet

ABOUT THE COURSE / EVENT

India is endowed with vast potential of solar energy with a total installed capacity of **28.5** GW. Looking into the government initiatives and priority areas, exposure to the current trends in research and development on solar collectors are very much important for researchers, academicians and entrepreneurs. In view of this, the short term course aims to encompass the opportunities, challenges and technologies related to the implementation of solar energy devices. Fundamentals and advances in solar collectors like solar thermal, photovoltaic, PV/T's, hybrid etc. will be discussed. Lecture session broadly includes detailed analysis and design of various collectors, PV system design, numerical examples, economic analysis of different solar technologies which will further be helpful to the participants for designing a sustainable energy generation package from renewable energy. Furthermore, a separate section on effective learning and teaching methodology will be included in the course. Faculty member of IIT Guwahati and experts from other reputed institutes will deliver lectures in the course.

COURSE OBJECTIVES

- To enable the learner to understand the solar energy technologies in broadest terms which includes different aspects of solar collectors, their importance, advancements, environmental impacts, economical feasibility, energy sources and their socio-economic issues.
- To enable the learner to device appropriate technology based on the available resources.
- To provide state of the art course material for effective teaching and learning to the faculty members and research scholars.
- To provide the insight of pedagogy for effective teaching.
- To provide exposure to the state of the art lab facilities and hands of experiments on appropriate set-ups.
- To analyze different challenges in the use of solar energy technologies, effective methods to overcome the challenges and to focus on different schemes and policies adopted by government of India.

Topics to be covered

- Solar radiation spectrum and solar geometry
- Fundamentals, design and testing of solar flat plate collectors (liquid and air)
- Concentrated solar collectors
- Solar photovoltaic fundamentals and power generation
- Solar PV/T collectors (Flat and concentrated)
- Hybrid solar collectors
- Inverter and Transformer for solar application
- Emerging technologies in solar energy storage
- Exposure to fabrication of solar cells
- Exposure to 500 kWp solar power plant
- Effective teaching and learning (pedagogy)

ELIGIBILITY

The course/event is open to Faculty members and research scholars from TEQIP mapped Institutions/Engineering Colleges/ATUs. No course fee is charged. TA & DA for the eligible participants will be reimbursed from their respective institutions.

BOARDING AND LODGING

Boarding and lodging facilities (Guest House/Hostel rooms or other permissible accommodation) will be provided for the participants from TEQIP mapped institutions.

IMPORTANT DATES

The last date for the receipt of duly sponsored application:
By email: scanned copy: 30/04/2020
Hard copy must reach by: 15/05/2020
Refundable fee: 15/05/2020
Intimation of selection: 20/05/2020

SELECTION CRITERIA

Number of seats: 30.
Selection will be based on First cum first served basis and subject to the deposition of refundable fee (Rs 2000.00) in the form of demand draft in favor of Registrar, IIT Guwahati, Guwahati, Assam 781039.

ADDRESS FOR CORRESPONDENCE

Dr. Pankaj Kalita
Assistant Professor
Centre for Energy,
Indian Institute of Technology Guwahati
Guwahati – 781039
Email: pankajk@iitg.ac.in
http://www.iitg.ac.in/pankajk

Application Form

1. Name (block letters):

2. Sex: ☐ Male ☐ Female

3. Category: ☐ General ☐ Reserved

If reserved, kindly specify: ☐ ST ☐ SC ☐ OBC

4. Highest Academic Qualification:

5. Specialization:

6. Designation & pay scale:

7. Name of the organization:

8. Experience:

(a) Teaching: (b) Industrial:

9. Address for communication:

Pin code: Mobile No.:

E-mail:

10. Choice of Accommodation: Guest House ☐

Hostel ☐ Will make my own arrangement. ☐

Please register me for the course on **"Advanced Solar Collectors"** to be held at IIT Guwahati.

I am sending an advance copy of this application by email to the coordinator of the course.

I undertake to send the Hard copy signed by the Head of my Institution along with the draft of refundable fee.

Place:

Date: *Signature of the applicant*

SPONSORSHIP / NOMINATION CERTIFICTE

Prof/Dr./Mr./Ms./Mrs./.....

.....

is an employee of our institute and his/her application is hereby sponsored/nominated. The applicant is permitted to attend the short-term course **"Advanced Solar Collectors"** at IIT Guwahati during 05/06/2020 to 09/06/2020 if selected.

I also certify that our institute/college is under the "Institution List" of 3rd phase of TEQIP Project of MHRD.

Date

Signature of Authority

Designation

Official Seal

Selected participants will be informed by e-mail. The duly sponsored/nominated application form should be mailed to:

Dr. Pankaj Kalita
Assistant Professor
Centre for Energy,
Indian Institute of Technology, Guwahati
North Guwahati, Guwahati – 781039, Assam
Ph. No. 0361-2583129 (O), 99549 05307 (M)
Email: pankajk@iitg.ac.in
url: **http://www.iitg.ac.in/pankajk**

ABOUT TEQIP

TEQIP conceived in pursuance of the NPE-1986 (revised in 1992) by Govt of India as a long term program to be implemented in different phases. After successful execution of TEQIP II, TEQIP III starts from 2017-18 as Central Sector Scheme with a focus on the Low Income States, Northeast, Hill States and Islands. The third phase of TEQIP is also special in a way that it incorporates twinning arrangements between mentee & mentor institutions with an emphasis on Focused Training (PT) and Focused Interventions from IITs in terms of deliverables and accountability. KIT, established at IIT Guwahati under 2nd phase of TEQIP is a focal point for training Faculty, Staff and students from TEQIP-III institutions in Knowledge Engineering, Content Creation, Improving Teaching, Pedagogy & administrative skills in identified niche areas/disciplines.

ABOUT KIT

KIT (**K**nowledge **I**ncubation Cell for **T**EQIP) at IIT Guwahati functions as a multi-disciplinary as well as interdisciplinary Innovation Incubation Centre with a focus to impart Knowledge, infusing innovation and leading a path to achieve academic excellence. Its activities are in the area of improving quality of technical education, incubator of Innovative Ideas; implementer of contemporary pedagogy practices and development of Learning Content in Technical institutions while mentoring them.

ABOUT IIT GUWAHATI

SNAP OF CAMPUS

IIT Guwahati campus is spread over a sprawling 785 hectares plot of green land on the north bank of the river Brahmaputra around 25 km from the heart of the city. With hills and vast open spaces, the campus provides an ideal setting for training. Details on how to reach IITG Campus are available on the institute website

Website: www.iitg.ac.in