

Solar Technologies for Industrial Process Heat and Power

April 20 - 22, 2015
(Monday to Wednesday)
@ VMCC, IIT Bombay

Introduction

Industry uses 10% of the national energy as process heat up to 250°C. Different thermal processes have different temperature and pressure requirements. In addition, various heat conducting media can be used, such as steam, hot water and thermal oil. Various solar technologies can be used for integration therefore providing a flexible and wide range of use of the generated energy.

Solar heat for industrial process (SHIP) applications are still at an early stage of development. At present, around 200 operating solar thermal systems for process heat are estimated worldwide, for a capacity of about 42 MWth (60,000 m²) [*Technical Study Report on Solar Heat for Industrial Processes*?, UNEP-GEF project SSFA/2010/GFL 5070-4A54-2647-2101 (2013)].

India is considered to be the leader and is active in this sector since last 15 to 18 years. IIT Bombay has played an active role in this development, both on research front as well as on technology development and dissemination front.

IIT Bombay has also proven its leadership in concentrating solar thermal power technologies. It has worked on unique concepts and has first-hand experience in designing, engineering, installation and operation of the first indigenous CSP plant in MW range. Today, the world is mainly concentrating on solar PV and wind technologies when it comes to electrical power generation; but they cannot be integrated easily with storage, thus limiting their penetration in power grids. Solar thermal technologies can have significant role to play in this respect. IIT Bombay is also working on relevant research aspects in this area presently.

Course objectives and outline

The course will give an overall perspective of the sector, capability to understand technical issues along with basic details of the wide range of the technologies involved, overview of the economic issues as well as R and D issues. It will cover the following topics:

1. Introduction to Solar Industrial Process Heat sector
2. Solar radiation and geometry
3. Solar thermal collector technologies
4. Integration of solar collectors with industrial processes
5. Solar thermal power plants: Technologies and issues
6. Solar thermal systems modeling and optimization
7. Thermal storage technologies
8. Receiver design approaches and simulation techniques
9. Economics and energy economics of solar systems
10. R and D issues in solar thermal technologies: CST and CSP

Who may benefit ?

The course is designed to suit academicians, policy makers, implementers as well as industrial users and manufactures. It is designed to cover basic concepts, design approaches and issues, related calculations and practical issues as well as economic and commercial issues.

Exposure to energy field is needed. Engineering background with exposure to solar thermal field is preferable. Ability to use scientific calculator is needed as there will be exercises and tutorials.

VENUE FOR CLASSES

Typically the classes will be held from 9 am to 6 pm everyday at VMCC (Victor Menezes Convention Centre), IIT Bombay, Powai, Mumbai – 400076.

LECTURE NOTES

Lecture notes/slides will be made available to the participants.

FACULTY

The teaching faculty constitutes experts from Department of Energy Science and Engineering, IIT Bombay.

ACCOMMODATION

No accommodation is available on the campus or in the Institute Guest house. Accommodation will have to be managed by the participants on their own.

REGISTRATION FEES

Industry:	10,000 + ST*
Academia:	8,500 + ST*
Govt. Organizations:	8,500 + ST*
Students:	7,500 + ST*

ST*: Please add Service Tax @ 12.36% till March 31, 2015 and as per new Govt. Rules from April 1, 2015

The demand draft should be drawn in favour of **“The Registrar, IIT Bombay- CEP Account”** payable at Mumbai.

No income tax is to be deducted at source from the course fee, as IIT Bombay is exempt from the same. The course fee includes course material, lunch and coffee/tea.

IMPORTANT DATES

Last date for receipt of registration form:

April 6, 2015; Notification of acceptance will be communicated to the accepted participants.

Course dates: April 20 to 22, 2015

Note:

- 1) Incomplete application forms will not be entertained.
- 2) For additional copies of the registration form, please photocopy or type information in the format given.
- 3) Certificate of participation will be awarded to all the participants of the course who attend all 3 days.

Completed registration forms (one form per participant) should be sent to the course coordinator at the following address:

Prof. Shireesh B. Kedare

(“Solar IPH & P” CEP Course Coordinator),

Department of Energy Science and Engineering,
Indian Institute of Technology Bombay,
Adi Shankaracharya Marg, Powai,
Mumbai – 400 076; INDIA

Phone : 022 2576 4899 (Meenakshi);
022 2576 7835 (SBK)

Fax : 022 2576 4890 (DESE Office)

Email : sbkedare@iitb.ac.in;
meenakshimulam@gmail.com

Short Term CEP Course on

Solar Technologies for Industrial Process Heat and Power

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Department of Energy Science and
Engineering, IIT Bombay

&

Office of
Continuing Education &
Quality Improvement Programmes



Indian Institute of Technology Bombay
Adi Shankaracharya Marg
Powai, Mumbai – 400 076

REGISTRATION FORM
Short-term CEP Course on
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April 20 - 22, 2015 @ VMCC, IIT Bombay

Name (Block Letters): _____

_____ Gender: M / F

Present designation : _____

Organization: _____

Mailing Address : _____

Phone (Land line) : _____(O)

FAX: _____

Personal Mobile: _____

Personal email : _____

Qualification : _____

Experience in energy sector : _____ Yrs.

PAYMENT: D.D. No.: _____ Dt. _____

Rs. _____ Drawn on _____

Demand draft/s should be drawn in favour of "The Registrar, IIT Bombay – CEP Account"

Date: _____ Signature of Applicant

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