



PoTIC

**PHOTOVOLTAIC TECHNOLOGY AND INNOVATION CENTRE (PoTIC)
and
NATIONAL CENTRE FOR PHOTOVOLTAIC RESEARCH AND EDUCATION**

Continuing Education Program 2-Day Short-Term Course on

“Theory and Technology of Silicon Solar Cells”

In the context of incentives for manufacturing of solar cells and modules in India, a large workforce with the knowledge of the technology and manufacturing is needed in the country. This course aims to impart the necessary knowledge in a short span of time. The course will cover the theory of solar cells, design of silicon solar cells, fabrication technology, characterisation of silicon wafers and partially and fully processed solar cells. The course will benefit practising engineers, students who aspire to work in this industry, and educators who are planning to train such students.

Those interested in a more detailed discussion of the manufacturing practice of TOPCon solar cells can take a 4-day course starting on 1st July 2026. You may see the details on the IIT Bombay Education Outreach program office webpage.

Course Contents:

- Introduction to the physics of semiconductor devices (band diagram, optical absorption, generation-recombination, charge carrier transport)
- Theory of silicon solar cells (equation governing the current voltage characteristics of solar cells, characteristics of silicon solar cells, design of silicon solar cells - optical design, junctions, passivation, impact of these parameters on solar cell characteristics)
- Production of silicon wafers starting with quartzite
- Unit Processes for Solar Cell Fabrication
- Introduction to TOPCon and HJT solar cell technologies and tandem solar cells.
- Characterisation of solar cells and wafers: Sheet resistance measurements, Electrochemical capacitance – voltage (ECV) measurements, ellipsometry, minority carrier lifetime, photoluminescence, dark IV, lighted IV and quantum efficiency, photoluminescence and electroluminescence imaging.

Course Coordinator: Prof. Anil Kottantharayil, Department of Electrical Engineering, and co-Principal Investigator of the National Centre for Photovoltaic Research and Education (NCPRE), IIT Bombay

Date: July 1 - 2, 2026

Venue: IIT Bombay, Mumbai

The course fee per participant in INR are as follows:

PARTICIPANT CATEGORY	Fees (INR)
Indian Students	5900
Government Employee/Academician	11800
Indian Corporate Employee	18880
International Corporate Employee	56640

* Fee is inclusive of 18% GST. The fee includes course material, lunch and refreshments.

**The fee for participants from SAARC countries is the same as that for Indian participants.

Limited accommodation is available on the IIT Campus, including hostels for students and a guesthouse for others, at rates determined by the hostel and guesthouse administrations. If you would like to avail accommodation on campus, please get in touch with Mrs. Ashwini Bangera at the details given below.

Registration Link:

Contact for more information:

Mrs. Ashwini Bangera
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