

General Format of the Course

The school will be conducted by faculty members from IIT Kanpur. In the first part of the course, the field of Organic Electronics will be introduced. In the second part, various aspects of Photovoltaic Systems will be explored with one session on Organic Solar Cells.

Typically, there will be two sessions each day - the morning and afternoon session. The engagement each day will be for 6 to 8 hours. The lectures will be delivered in the morning session. The afternoon session may be used for lectures, discussions or simulation labs related to the topics covered in the lectures.

Number of Participants:

The maximum number of registered participants in the course will be 20. This is limited mainly by the number of persons one can effectively interact during the simulation sessions. Lectures will be open to all who can fit in the lecture hall after registered participants have taken their seats.

Participants from the industry will be by invitation from among our research collaborators. A maximum of two participants from each organization will be allowed.

We will allow a maximum of 16 participants from the academia with a maximum of two from each institution.

Fees and Expenses during the Course:

The course fee, boarding and lodging during the course will be provided to the participants. Travel fare from home institute by III AC can be provided to academic participants on request.

Background

The Samtel Centre for Display Technologies (SCDT) at IIT Kanpur was formally established on 5th March, 2000 through a memorandum of understanding between Samtel Group of Industries and IIT Kanpur. This has been a beginning of one of the most significant efforts towards meaningful industry-academia interaction to meet the challenges of emerging technologies in electronic displays. With an active support from the Department of Science and Technology, New Delhi, and Samtel Group of Industries, SCDT has become a leading research group on Organic Electronics, with especial emphasis on displays. Research work with support from various funding sources and industries in the areas of solar cells, printable electronics and sensors has taken off in the past few years. The centre now has eight faculty members from five different departments and the number of students engaged in research at the centre varies from 30 to 40.

The objectives of the course:

- a) To promote and make academia and industry aware of state-of-art in organic electronics.
- b) To understand the state of the art and demands of the solar photovoltaic industries and the potential role of organic electronics in it
- c) To form a meaningful network of researchers and industry interested in organic electronics and solar photovoltaic systems, with possibility of utilizing infrastructure at IIT Kanpur.

Intended Attendees

- * Students, Teachers and/or Researchers
 - * Engineers and Technical Consultants
- in areas related to organic electronics and photovoltaic systems



Samtel Centre for Display Technologies, IIT Kanpur

Present

A Short Course

on

Organic Electronics and
Photovoltaic Systems
6th to 14th July, 2009
IIT Kanpur



The funds to organise this course is from the project on "Research and outreach activities in solar energy" sponsored by Prabhu Goel Foundation at IIT Kanpur

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The Lecture Topics will Include:

- Introduction to Organic Electronics
- Basics of Quantum Mechanics
- Atoms to Molecules
- Luminescence
- Charge Injection
- Charge Transport
- I-V Characteristics of Single Layer Organic Device
- Materials & Processing of Devices
- Organic Light Emitting Diode (OLED)
- Organic Thin Film Transistor (OTFT)
- Organic sensors,

- Introduction to Photovoltaic (PV) Systems
- Organic Solar Cells,
- Inorganic Solar Cells
- PV System design
- Storage
- Fuel-cells
- Fuel Generation for Fuel-cells

The Simulation Laboratories Include:

- Coupled Quantum Well and Stokes Shift
- Simulation of a Single layer device
- Simulation of OLED Device
- Simulation of Top contact TFT using Silvaco
- Simulation of Bilayer Organic Solar Cell Device

Selection Criteria for Academic Participants:

Preference will be given to academic participants in the following order:

1. Researchers/Faculty members engaged in or intending to develop organic electronics
2. M.Tech students
3. Ph.D students whose work is nearing completion

For students, selection criteria will include review of personal statement & academic record and recommendation of research adviser (This can be sent by advisor on directly to scdt@iitk.ac.in)

The criteria selection will also include how early the potential participant responds to us by email.

Academic Participants must have background in at least are of following fields: materials, physics, electrical, electronics, chemical engineering and chemistry.

For Registration fill in the form at <http://www.iitk.ac.in/scdt/OS&PS2009-registration>

Academic participants need to send us a demand draft of Rs. 500/- towards registrar, IIT Kanpur payable at Kanpur (The demand draft will be refunded to attendees)

Last day for receipt of form:
10th June 2009

Announcement of selected candidates:
15th June 2009