

Registration Form

Name: _____

Designation: _____

Department: _____

Address for Communication:

City: _____ Pin Code: _____

Mobile No.: _____

E-mail: _____

Category of Participant:

- Faculty/Student/Research Scholar of NITK
- Faculty/Student/Res. Scholar of other Institution
- Industry Participant

Accommodation Required: Yes / No

Payment Mode: DD for reg. fee in favor of The Director NITK Surathkal, payable through any nationalized bank at Surathkal / Mangalore.

I agree to attend the course for the entire duration.

Date: _____ Signature of the Applicant

Place: _____



Address for Correspondence

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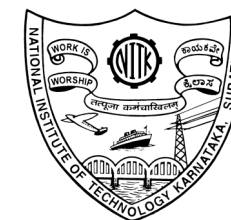
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Point of Contact

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Organic Semiconductors for Microelectronics & Display Applications

Organized at



NITK Surathkal, Mangalore

Supported by



Global Initiative of Academic
Network (GIAN)

Date: May 30, 2016 to June 3, 2016

Venue: NITK Surathkal, Mangalore.

<http://physics.nitk.ac.in/upcoming-events/organicelectronics/>

Organic Semiconductors for Microelectronics & Display Applications

Short Course Supported by MHRD, Govt. of India under GIAN

Course Overview

This Short Course will provide an insight into the exciting new field of Organics Electronics. Starting with an introduction to the physics of organic semiconductors, it will include their applications in thin-film transistors (TFTs), memory devices and organic light-emitting diodes (OLEDs) for lighting and display applications.

In the first part of the module band theory of solids (inorganic and organics) will guide the way to the energy band diagram of metal-semiconductor (MS) contacts as a fundamental constituent of electronic devices. By means of the metal-oxide-semiconductor (MOS) capacitor, concepts such as accumulation and depletion of charge carriers in organic semiconductors will be discussed and contrasted to their inorganic counterparts. This leads over to the structure and operating principle of field-effect transistors (FETs), their device architectures, considerations on switching speeds and scaling. As part of their applications, the role of organic TFTs in (unipolar and complementary) logic circuits, displays, and memories will be introduced. The module will then look at general properties and requirements of memories such as writing/reading speeds, retention time, endurance, and scalability/integration. Different memory concepts (e.g. capacitive, resistive, floating-gate) will be introduced. In the second part of the module the field of optical displays will be introduced, covering the technologies currently in use and those expected to feature in the next generation of display technologies with emphasis on OLED-based displays. The module will offer a short introduction the different kinds of optical displays available, and will briefly discuss the current driving forces governing market trends. Various manufacturing technologies will also be highlighted

Course Contents

- 1: Energy band structure and metal-semiconductor contacts
- 2: Metal-insulator-semiconductor capacitor
- 3: The field effect transistor
- 4: Organic transistors in microelectronics
- 5: Organic memory devices
- 6: Introduction to optical displays
- 7: Colourimetry and colour generation in optical displays
- 8: Non-emissive displays
- 9: Emissive displays
- 10: Organic light emitting diode (OLED) in displays

Teaching Faculty

Dr. Thomas Anthopoulos is a Professor of Experimental Physics in the Department of Physics and The Centre for Plastic Electronics, Imperial College London. He received his B.Eng., and Ph.D., from Staffordshire University in UK. He then moved to University of St. Andrews where he worked on organic light-emitting diodes. In 2003 he joined Philips Research Laboratories in The Netherlands to work on organic semiconductors for use in opto/electronic devices and integrated circuits. In 2005 he was awarded an EPSRC Advanced Fellowship and in 2007 a RCUK Fellowship both hosted in the Department of Physics, Imperial College London. His current research interest is focused on the physics of novel organics, inorganics and hybrid materials and devices.



His current research projects include:

- Novel inorganic transparent semiconductors
- High-mobility organic semiconductors & devices.
- Nanoscale opto/electronic devices & systems
- Transparent photo-transistors for invisible electronics
- Charge carrier transport in semiconductors & devices
- Novel nano-lithography methods for plastic nano-electronics
- Novel device concepts for energy harvesting & generation

Important Dates

Registration Starts	16/05/2016
Registration Closes	30/05/2016
Event Date	30/05/2016 to 03/06/2016

Registration Fee

Participants from

Industry / Research	Rs. 10,000/-
Academic Institutions	Rs. 5,000/-

Payment Mode: DD in favor of The Director NITK Surathkal, payable through any nationalized bank at Surathkal / Mangalore.

Scanned copy of the DD and the filled Registration form must be uploaded during the online registration on or before May 27, 2016.

Max. no. of Participants: Limited to 50 on first come first serve basis.

Registration Link: <http://physics.nitk.ac.in/upcoming-events/organicelectronics/registration>

The above fee includes all instructional materials, computer use and internet facility. The participants will not be given any TA/DA and boarding / lodging. Participant can bring their laptop for effective utilization of course delivery.