

INTERNATIONAL MONSOON COURSE ON

POLYMER AND HYBRID ELECTRONICS: PHYSICS AND DEVICE APPLICATIONS

21 to 27 August 2017



Hosted by

LABORATORY FOR MOLECULAR PHOTONICS & ELECTRONICS (LAMP)
DEPARTMENT OF PHYSICS



राष्ट्रीय प्रौद्योगिकी संस्थान कालिकट

NATIONAL INSTITUTE OF TECHNOLOGY CALICUT

Organic and hybrid (organic-inorganic) electronics including polymer and hybrid organic field-effect transistors and light-emitting diodes, organic solar cells etc. is a highly emerging area of electronics that has the potential for applications in diverse areas from energy, communication, computation medical and environmental technologies. Highlighted by the flexibility & Large area printability on all sorts of materials from glass, plastics to textiles, this technology holds lots of promise for consumer and energy devices. This short term course on polymer and hybrid electronics is an attempt to provide both basic ideas and also the state of the art information in this area. A pioneer in the area, Prof. Aleshin from Ioffe Institute, Russia will be the faculty for this course.

INTERNATIONAL COURSE FACULTY

Prof. Andrey N. Aleshin is currently Professor of Saint-Petersburg Electrotechnical University "LETI" (ETU), Department of Micro- and Nanoelectronics as well as Deputy Director of the Division of Solid State Electronics & Head of Organic electronics group at IOFFE Institute Russian Academy of Sciences, Saint - Petersburg, Russia (<http://www.ioffe.ru/LNEPS/research/organic.html>).



He has thirty six years of experience in Materials Science, Semiconductor Physics and Polymer Physics research: with strong background in experimental and theoretical physics. He had long experience in fabricating organic field-effect transistors, light-emitting diodes, light-emitting field-effect transistors, and devised many new perspective polymer and hybrid materials for organic electronics. He is the author of 180 publications including those co-authored with Nobel laureate Prof Allan Heeger (<https://www.icb.ucsb.edu/people/alan-j-heeger>).

COURSE MODULES

Module 1: Trends in the development of modern microelectronics, the advantages of flexible organic electronics

Module 2: Structure of polyconjugated systems, particularly the absorption mechanisms of generation and recombination of charge carriers in organic and hybrid (organic, the inorganic) semiconductors

Module 3: Organic light-emitting diodes (OLEDs): materials, structure, working principle, the current state of and prospects for flexible organic displays

Module 4: The organic and hybrid field effect transistors (OFETs): materials, structure, working principle, the current state and prospects

Module 5: Organic and hybrid (organic, inorganic) solar cells : materials, structure, working principle, the current state of and prospects for renewable energy

Module 6: The organic and composite structures from the effects of resistive and OFET memory: materials, working principle and the prospects for the creation of flash memory devices

Module 7: Flexible organic electronics: the current state and prospects

Module 8: The graphene technologies in organic electronics.

Plus, Lab sessions and Tutorials

WHO CAN PARTICIPATE

Students (UG/PG/PhD) and faculty members from all academic institutions

Scientists/Technologists/Engineers, and others from industry, private/government services, NGOs, research institutions.

HOW TO APPLY

Applicants have to first register in the GIAN portal at the site <http://www.gian.iitkgp.ac.in/GREGN/register>. (Those already registered need not register again).

Using the user id and the password thus generated through this registration you can proceed for Course Registration in the portal. Select this course from the list of courses available in the portal and follow the instructions to register for it. You also have to email your details to the course coordinator in the mail id: phe@nitc.ac.in. You will be intimated about selection by e mail by the course coordinator.

Once selected you have to pay the course fee online by Net Transfer or by Credit/ Debit Card to the following account:

COURSE FEE

Participants from Abroad : USD : 100/-

Students (UG/PG/PhD) and Faculty members: ₹.1000/-

All others: ₹.2000/-

The above fee includes, computer use for tutorials and assignments, laboratory equipment usage, and free internet facility.

The participants will be provided accommodation on payment basis (subject to availability and on first come first serve basis) in the institute hostel and guest house. (phe@nitc.ac.in)

Account Name: Director, NIT Calicut, GIAN

Account No: 37021855472 Bank Name: SBI. CREC Branch

Branch Code: 002207

IFSC Code: SBIN0002207

DATES TO REMEMBER

Online registrations: August 5, 2017

Intimation of selection: August 7

Course fee remittance: August 10

HOST FACULTY & COURSE CO-ORDINATOR

Prof. P. Predeep

LAMP, Department of Physics

NIT Calicut

Tel. 9495329035 / 0495 2285113

predeep@nitc.ac.in

<http://nitc.ac.in/index.php?url=users/view/219/13/3>

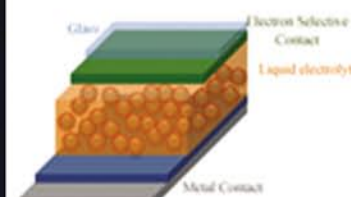
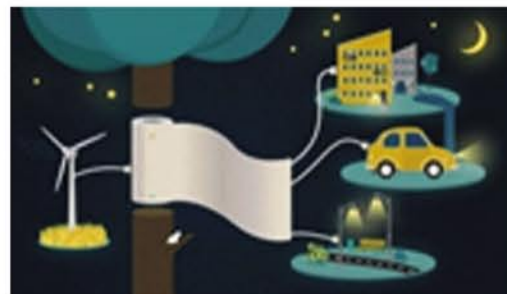


Image credits: Lab. Of Organic Electronics, Linköping University (LIU)