



FlexE

National Centre for Flexible Electronics

SCDT – FlexE Centre Webinar Series

The webinars aim to bring together researchers in Flexible Electronics and allied areas from across India (and other countries) on a single platform to promote professional interaction.

Webinar by



Dr. Asha S.K.

Polymer Science & Engineering Division
CSIR National Chemical Laboratory (CSIR-NCL) Pune

“Pi Conjugated Polymers for Energy Applications”

Date: 10th September, 2024

Time: 7:30 PM to 8:30 PM

Visit www.iitk.ac.in/scdt/webinars.html to access the zoom link to join the webinar.

The event will be chaired by

Dr. Suman Kalyan Samanta

Indian Institute of Technology Kharagpur

Abstract of the Webinar

Pi-Conjugated molecules and polymers are materials created by alternate σ and π bonds. They are widely classified as electron (n-type), hole (p-type), and electron-hole (ambipolar) transporting material, depending upon the nature of their charge transport. A molecular design involving D-A copolymer architecture by suitable selection of donor and acceptor units allows a fine-tuning of energy level (HOMO/LUMO). P-(NDI2OD-T2) (Polyera ActivInk N2200) is a naphthalene diimide (NDI) and bithiophene-based donor-acceptor polymer that is extensively utilized in all-polymer solar cells and OFET-applications due to its desirable photophysical and semiconducting properties. But this polymer has the drawback of unwanted aggregation of the aromatic core leading to poor device performance. In my talk, I will present how we have overcome this issue by various methods like copolymerization, self-assembly, etc.

Information about the speaker

Dr Asha is a Chief Scientist in the Polymer Science & Engineering Division of CSIR National Chemical Laboratory (CSIR-NCL) Pune, India. She obtained her PhD from Indian Institute of Science, Bangalore under the guidance of Professor S. Ramakrishnan in 2000. Subsequently, she completed a postdoctoral fellowship in the research group of Professor E. W. Meijer at the Eindhoven University of Technology, The Netherlands. Additionally, she gained experience working at GE, Bangalore, India and CSIR NIIST in Trivandrum. Since 2008 Dr Asha has been working as a scientist at NCL Pune, where she has successfully established her research group and has dedicated the past 16 years to developing polymer-based materials with potential applications in various fields such as the optoelectronic industry, biosensors, and additive manufacturing. Dr Asha has so far guided 20 Ph.D. scholars and several PhD and project students are currently working in her group. She has published more than 70 papers in esteemed international journals and has served on the Editorial Advisory Board of the American Chemical Society journal, *Macromolecules* from 2018 to 2020. Currently she holds a position as a member of the Editorial Advisory Board for the *Journal of Macromolecular Science, Part A: Pure and Applied Chemistry*, which is published by Taylor and Francis Group. Dr Asha has been honoured with the prestigious Science and Engineering Research Board (SERB) Power Fellows 2022, presented by the Department of Science and Technology (DST).