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. Adrica Kyndiah
Printed and Molecular Electronics
Istituto Italiano di Tecnologia (IIT), Milan, Italy

on
"Electrolyte-Gated Organic Transistors for Biosensing and Electrophysiology"

Date: 10th June 2025
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. Monica Naorem
National institute of Technology Mizoram

Abstract of the Webinar

Electrolyte-Gated Organic Transistors (EGOTs) represent a promising class of bioelectronic devices with applications in biosensing and electrophysiology. Their unique combination of low-cost fabrication, solution processability, mechanical softness, and intrinsic biocompatibility makes them particularly well-suited for developing point-of-care diagnostic tools and platforms for interfacing with living tissues. In this talk, I will introduce the fundamental operating principles of EGOTs and highlight recent advances in the field through representative examples of state-of-the-art biosensors. I will also present my ongoing research on the use of EGOTs for monitoring cell cultures, recording action potentials from electrogenic cells, and evaluating drug responses, with a focus on developing scalable and minimally invasive technologies for in vitro applications.

Information about the speaker

Adrica Kyndiah is a researcher at the Istituto Italiano di Tecnologia (IIT), where she leads activities in biosensors and bioelectronics within the Printed and Molecular Electronics group. She holds a B.Sc. and M.Sc. in Physics from North Eastern Hill University, Shillong, India, and earned her PhD in Chemistry from the Università di Bologna in 2015. Her doctoral work, carried out at CNR Bologna, focused on charge transport and interfacial properties in organic field-effect transistors. She pursued postdoctoral research in France at CEA Grenoble and CNRS Bordeaux, before moving to IBEC Barcelona in 2017 as a Marie Curie Cofund fellow. There, she launched a new research line in organic-bioelectronics and acted as Co-PI of the Marie Curie ITN project BORGES. Her interdisciplinary research integrates organic electronics, materials science, and bioengineering to develop non-invasive, high-resolution platforms for monitoring cellular activity. These technologies hold strong potential for diagnostics and drug screening. She is currently the coordinator and PI of RHYTHMiC, a national project funded under the bando a cascata of the PNC (Piano Nazionale per gli Investimenti Complementari), focused on advancing bioelectronic technologies for biomedical applications. She actively collaborates across disciplines and publishes regularly in high-impact journals.