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. Debdutta Ray
Department of Electrical Engineering
Indian Institute of Technology Madras

"A dopant free white OLED"

Date: 10th December, 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. Pabitra Nayak
Tata Institute of Fundamental Research, Hyderabad

Abstract of the Webinar

White OLEDs find application in lighting and in TVs where the latter use a white OLED + color filter technology. Traditionally white OLEDs are tandem structures with 2 or 3 unit stacks. The charge generation layer (CGL) in a tandem OLEDs plays an important role in the functioning of the OLED. In theory, a p+/n+ layer should be used as the CGL. However, in practice, the lack of an efficient n-dopant for organic semiconductors leads to solutions which are not ideal. In this work we discuss the designing and functioning of a white OLED which is a single unit stack and which, additionally, does not require a dopant for emission. We understand the various emission mechanisms which lead to the broad emission. A dopant free single stack structure eliminates the requirement of a CGL as well as co-evaporation of materials.

Information about the speaker

Debdutta Ray is Associate Professor in the Electrical Engineering department at IIT Madras. Previous to joining IITM he worked in TU Dresden and Georgia Tech. He has a PhD from TIFR. His research interest is on organic semiconductor devices. He has set up India's first AMOLED Research Center (a national center of excellence) in IITM. His group (Organic Optoelectronics group) in IITM works on various aspects of organic optoelectronic devices.