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. Mitradip Bhattacharjee
Electrical Engineering and Computer Science Department, Indian Institute of Science Education and Research Bhopal

on
"Toward Universal Flexible Biosensors: Opportunities with Printed Graphene FET Technology"

Date: 16th June 2026
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. Debarun Sengupta
Shiv Nadar Institution of Eminence

Abstract of the Webinar

Flexible and wearable biosensing technologies are here to transform next-generation healthcare by enabling continuous, real-time, and decentralized monitoring of physiological biomarkers. This talk focuses on a flexible and fully printed graphene field-effect transistor (Gr-FET) platform that serves as a versatile and scalable biosensing architecture for a broad range of biochemical targets. The developed Gr-FET device exhibits stable operation, high transconductance, low hysteresis, and excellent sensitivity. As a proof-of-concept demonstration, the platform is applied to the detection of ferritin, an important biomarker for assessing iron deficiency anaemia and related health conditions, achieving sensitive detection at clinically relevant concentrations. Beyond ferritin sensing, the presented Gr-FET technology offers a universal framework for the development of flexible, low-cost, and high-performance biosensors tailored to diverse healthcare applications. The work highlights the growing importance of printable and mechanically compliant biosensors in advancing personalized medicine, point-of-care diagnostics, and remote health monitoring.

Information about the speaker

Mitradip Bhattacharjee (Senior Member, IEEE) is an associate professor with the Electrical Engineering and Computer Science Department, Indian Institute of Science Education and Research (IISER) Bhopal, India, where he is leading the i-Lab Research Group. His research interests include electronic sensors and systems, biomedical engineering, bioelectronics, implantable and ingestible electronics, flexible/printed and wearable electronics, wireless systems, IoT, micro/nanoelectronics, soft-robotics, m-Healthcare, AI/ML in sensing, and reconfigurable sensing antennas. He has authored more than 100 research articles in reputed journals/conferences and filed more than 28 national/international patents. He has also authored several book chapters/books to date. He is the recipient of several awards and honors, such as the INAE Young Engineer Award in 2025, INAE Young Associate 2025, the Young Professional Award by the IEEE Sensors Council, USA, in 2025; the Visvesvaraya YFR Fellowship by MeitY, Govt. of India, in 2025; the Marie-Curie Seal of Excellence Award by the European Commission in 2019; the Nanochallenge Award by PSG in 2018; and the Gandhian Young Technological Innovation Award at Rashtrapati Bhavan in 2016, among others. He served as the chair of the IEEE Sensors Council Young Professionals, USA, in 2022. He is serving as a guest editor and associate editor in various journals and magazines, such as IEEE IoT Journal, IEEE Sensors Letters, IEEE Sensors Alert, IEEE JFLEX, and npj Flexible Electronics, among others. He is also serving as the web Editor-in-Chief of the IEEE Sensors Council. Mitradip was elected as a member-at-large of the IEEE Sensors Council, USA, in 2025.

Samtel Centre for Display Technologies (SCDT) and the National Centre for Flexible Electronics (FlexE Centre) of IIT Kanpur are dedicated to flexible electronics research and commercial deployment respectively

For more information
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