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. P. Susthitha Menon
Institute of Microengineering and Nanoelectronics (IMEN),
Universiti Kebangsaan Malaysia (UKM)

on
"Plasmonics in functionalizing optical biosensors for flexible electronic applications"

Date: 11th October, 2022
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. Pydi Ganga Mamba Bahubalindruni
Indian Institute of Science Research and Education, Bhopal

Abstract of the Webinar

Plasmonics takes advantage of the coupling of light to charges like electrons in metals, and allows breaking the diffraction limit for the localization of light into subwavelength dimensions enabling strong field enhancements. This presentation will give an overview of the design and development of plasmonic optical biosensors utilizing the Kretschmann configuration with angular interrogation for detecting the presence of biomolecules. Methodology of this study was executed using Finite Difference Time Domain (FDTD) method and experimental characterization was executed using Bionavis Surface Plasmon Resonance (SPR) equipment. Kretschmann-based SPR sensor with 50 nm-thick gold film and functionalization was used for glucose, urea and creatinine detection at 670 nm and 785 nm electromagnetic (EM) wavelengths. There will also be an overview on plasmonic applications in other biosensors, micro-ring resonators, solar cells, photodiodes, quantum communication and flexible electronics.

Information about the speaker

P Susthitha Menon is currently an Associate Professor at the Institute of Microengineering and Nanoelectronics (IMEN), The National University of Malaysia (Universiti Kebangsaan Malaysia - UKM). She received her BEng degree from UKM in 1999. As an Intel scholar, she worked at Intel Malaysia and Intel System Manufacturing Technology Division (SMTD), Oregon, USA as a Product Engineer for mobile modules systems from 1999 to 2002. She then received her MSc and PhD (Distinction) degrees in 2005 and 2008 respectively from UKM, for the development of Si- and InGaAs-based interdigitated p-i-n photodiodes. At IMEN, she is specializing in the field of plasmonics, optoelectronics, nano-photonics, and robust engineering optimization. Dr Menon is a Senior Member of SPIE, OSA and IEEE since 2009. She is a member of IEEE Electron Devices Society (EDS) Board of Governors (BoG), the Vice Chair of the IEEE EDS R10 SRC committee and is the Past Chair of the IEEE EDS Malaysia Chapter 2017-2018 which during her tenure as Chair, won the IEEE EDS R10 Best Chapter Award in 2018 as well as the IEEE Malaysia Section's Best Chapter Award in 2017 and 2018 respectively. She also serves various functions in international conferences including EDTM and IFETC. Recently, she was nominated to be an IEEE STEM Champion and Chair of IEEE EDS Women in Electron Devices.