



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. Samit Kumar Ray

Professor
Department of Physics
Indian Institute of Technology Kharagpur

on
“Towards Next Generation Flexible
Photonic and Energy Harvesting Devices”

Date: 10th January, 2023

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. Rituraj

Indian Institute of Technology Kanpur

Abstract of the Webinar

Optoelectronic and electronic devices fabricated on flexible platforms have a large number of applications in the field of flexible solar cells, bio-integrated wearable devices and particularly in next generation flexible and roll-up displays. Bulk Si wafers are brittle and rigid but becomes flexible when its thickness is reduced to micro-nanoscale, possessing the capability to act as flexible substrates for the fabrication of Si CMOS compatible optoelectronic devices with mechanical flexibility. On the other hand, silk protein, a natural biopolymer, offers new opportunities to develop eco-friendly flexible devices due to its flexibility in thin film form with a high stiffness and toughness. We shall review the research progress in our group on the characteristics of various flexible electronic, optical, piezotronic and energy harvesting devices. The efficacy of Si membranes, silk protein, colloidal quantum dots and 2D materials for the next generation flexible and printable devices will be presented.

Information about the speaker

Prof. Samit K. Ray is currently the Chair Professor in the Department of Physics, IIT Kharagpur. He has previously served as the Director, S. N. Bose National Centre for Basic Sciences, Dean (Post-graduate & Research Studies), Head, Department of Physics and founder Head, School of Nanoscience and Technology at IIT Kharagpur. His research interests are in the area of semiconductor quantum technology, low dimensional materials, photovoltaics and nanophotonic devices. Prof. Ray is a fellow of the National Academy of Sciences India, Indian National Academy of Engineering, West Bengal Academy of Science & Technology and is the recipient of INSA Young Scientist Award, UGC Homi Bhabha Award, MRSI Superconductivity & Materials Science Senior Award etc.