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

Prof. Amlan J. Pal
Director, UGC-DAE Consortium for Scientific Research, Indore

On
"A Spin in Organic Electronics: Organic Spintronics"

Date: 15th June, 2021
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
Prof. Swaminathan Parasuraman
Indian Institute of Technology Madras

Abstract of the Webinar

Organic semiconductors are being used as active materials in different devices, such as molecular rectifiers, electrically bistable devices, memory, photovoltaic, and light-emitting devices. A weak spin-orbit coupling and a hyperfine interaction in conjugated organics have led to a long spin-relaxation time in these semiconductors as compared to the conventional inorganic ferromagnetic materials. Spin-related transport processes can hence be considered in organic semiconductors. A series of revolutionary experiments have accordingly demonstrated the integration of such organic materials in spin related electronics. As an example, spin-valve (SV) devices include electron spin degrees of freedom in charge conduction processes. Typical spin-valve devices rely on the relative magnetization alignment of two ferromagnetic electrodes separated by non-magnetic materials yielding two distinct resistive states. In this talk, a subtle transition from organic electronics to organic spintronics will be discussed.

Information about the speaker

Prof. Amlan J. Pal is the director of UGC-DAE Consortium for Scientific Research, Indore. He is also a JC Bose National Fellow and a Senior Professor at the School of Physical Sciences, Indian Association for the Cultivation of Science, Kolkata. He received the M.Sc. degree in physics and Ph.D. from University of Calcutta and Jadavpur University, respectively.

His research interests include device physics, ultrahigh vacuum scanning tunneling spectroscopy, and materials engineering leading to organic electronics, solar cells based on organic/inorganic semiconductors and hybrid halide perovskites, organic spintronics, and so forth.

So far, he has published more than 240 articles in international journals and guided 25 students for their Ph.D.'s. He is a Fellow of all three science academies of India and also of Indian National Academy of Engineering.

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

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