

Seminar

Advanced Ultrafast Optical Spectroscopy of Semiconductor Systems: Revealing Electronic to Structural Dynamics

Navendu Mondal

Imperial College London, UK

Understanding the fate of photogenerated charge-carriers, excitons in semiconductor systems is of paramount importance for their full realisation in optoelectronic to photonic applications. This talk will cover the development and application of innovative ultrafast optical-control spectroscopic approaches to capture and control various underlying transient phenomena (relevant to charge/energy-transport) within semiconductor systems to real working devices. This talk will be targeted towards identifying and tailoring the intrinsic and extrinsic nonradiative loss events in semiconductor nanosystems relevant to light-emitting and photovoltaic applications. Furthermore, it will also showcase the influence of structural motions on modulating the electronic properties/performance of soft semiconductors like perovskites. These research development would create the basis towards design guideline for prospective material engineering and processable device development with the aid of purpose-specific spectroscopic techniques.

Monday, Dec 18th 2023

4:00 PM (Tea / Coffee 3.45 PM)

Auditorium, TIFR-H