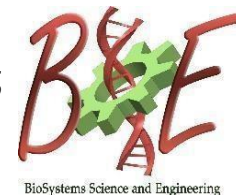




Indian Institute of Science
Centre for BioSystems Science and Engineering

BSSE Seminar



17 August 2020, 11:00 AM, Virtual

Studying Functional Bio-interfaces using Scanning Probe Microscopy Approach

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ABSTRACT:

Scanning Probe Microscopy (SPM) offers high resolution imaging and pico-newton force sensitivity with nano-meter displacement accuracy in spectroscopy. The ability to study systems in real-time and in vitro under physiological conditions are major advantages of this approach. In recent years, two popular SPM techniques, Atomic Force Microscopy (AFM) and Scanning Tunneling Microscopy (STM) evolved from being an imaging tool to a multi-functional toolbox for various advanced facets in science and technology. The primary focus of our lab is to investigate intriguing biological events at the single-molecule level using SPM approach. In this presentation, I would briefly discuss about the following three topics, (i) biophysical investigations on extracellular vesicles derived from cells to identify critical biomarkers for cancer, (ii) mechanical properties of centromeric nucleosomes and its relevance to centromeric accessibility and (iii) understanding the mechanism of GPCR mediated signaling events by studying organization of rhodopsin in rod outer segment disc membranes. Finally, I would outline my future research plans.