



IBS Center for Molecular Spectroscopy and Dynamics

Colloquium

■ **SPEAKER**

Dr. Chia-Lung Hsieh (Institute of Atomic and Molecular Science (IAMS))

■ **TITLE**

Nanoscale Physics in Living Systems Unveiled by High-Speed Optical Microscopy

■ **ABSTRACT**

Attempting to understand biology from a physics perspective is often considered incomplete, although the fundamental interactions between individual molecules can be well described by the physical laws. The challenge becomes clear when handling a mixture of biomolecules with great diversity, resulting in a complex and dynamic system where physical rules provide little help in explaining and predicting biological events at the macroscopic scale. This is because biophysics at the mesoscopic scale (1-1000 nm) is less understood primarily because the reliable data at the relevant spatial and temporal regimes are scarce. In this talk, I will show how an ultrahigh-speed optical microscope helps to study physics in biological systems at the nanoscale. The acquired data are unique for understanding the operation of living systems from the physical point of views. Examples of single-molecule and cell dynamics will be discussed.

■ **DATE AND VENUE**

April 19, 2022 (Tuesday, 11:00 - 12:00)
Virtual Seminar

■ **LANGUAGE**

English

■ **INVITED BY**

Dr. Jin-Sung Park