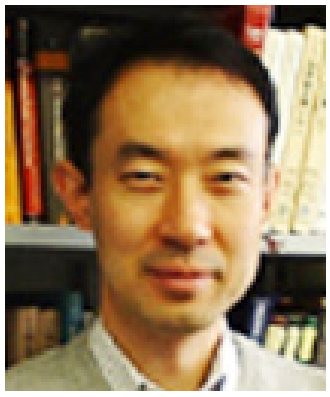
NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Physical and Mathematical Sciences
College of Science

CBC SEMINAR ANNOUNCEMENT



Professor Keisuke Tominaga
Kobe University, Japan

Terahertz Molecular Science in the Condensed Phases

There has been considerable interest in both the experimental and theoretical investigation of the low-frequency motion associated with molecules and molecular aggregates in condensed phases. Dramatic progress has been made in the generation and detection techniques of freely propagating THz radiation based on femtosecond pulsed laser in the past two decades. Because the pulse duration of the THz radiation is in a sub-picosecond time region, it is possible to measure the electric field of the radiation by coherent detection methods, which consequently allows us to conduct THz time-domain spectroscopy (TDS). By THz-TDS we can obtain the refractive index and extinction coefficient of a medium by measuring the phase and amplitude of the THz radiation. THz-TDS is an attractive method for studying dynamics in condensed phases with time scales of sub-picoseconds and picoseconds. In this talk I summarize our recent activities on the application of pulsed THz radiation spectroscopy to condensed phases such as biomolecules, solutions, and liquids. Furthermore, I will briefly mention the optical-pump THz-probe spectroscopy for organic semiconductor thin films to observe charge carrier dynamics created by optical excitation.

Date: 23 September 2019 (Monday)
Time: 2.30pm – 4.00pm
Venue: SPMS Graduate and Research Conference Room
Host: Associate Professor Loh Zhi Heng