

RIKEN

Center for
Advanced Photonics

DATE

FRI. JUL. 24

TIME

16:20-17:20

RAP SEMINAR SPECIAL TALK



KEITH A. NELSON

Professor of Chemistry, MIT

LECTURE TITLE

Nonlinear optical spectroscopy and control from THz through x-ray spectral ranges

ABSTRACT

Advances in ultrafast optics and spectroscopy using light pulses in every spectral range from THz frequencies to hard x-rays have opened up novel prospects for optical control of collective material behavior and properties. It is now possible to move materials along selected degrees of freedom to under far-from-equilibrium dynamics that may modulate observable properties or reach new metastable configurations in ways that are revealing fundamentally and that may enable practical exploitation. THz and IR driving of phonon and magnon dynamics at near-zero wavevectors and x-ray excitation at high wavevectors and the nature of the states that are created through them will be illustrated. Finally, optical excitation of strain waves up to Mbar stresses will be illustrated. In many of these cases, spatial and temporal shaping of light fields plays key roles in achieving optimal levels of control.



VENUE

Room W524-525, 5F, Cooperation Center,
Wako Campus, RIKEN (Zoom available)

LANGUAGE

English

CHAIR / CONTACT

Koichiro Tanaka
rap-seminar-secretariat@ml.riken.jp

REGISTRATION

