

# SPECIAL PHYSICAL CHEMISTRY SEMINAR

Thursday  
September 17, 2015

3:00 pm

Room 8335  
Chemistry

*Nano-scale optical imaging and spectroscopy of plasmonic systems, thermal near-fields, and phase separation in correlated electron systems*



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*Host: Marty Zanni*

While optical spectroscopy enables the ability to directly measure electronic, spin, and lattice excitations in condensed matter systems, the resolution of far-field microscopy techniques is restricted by the diffraction limit. Unfortunately, this resolution limit is often too coarse for the spatial mapping of nanoscale and mesoscopic physical phenomena. I will discuss the utilization of nano-optical measurement techniques, specifically scattering-type Scanning Near-field Optical Microscopy (s-SNOM), to push beyond the diffraction limit and characterize optical properties of condensed matter systems with nanometer spatial resolution. By taking advantage of localized optical near-fields, s-SNOM techniques may be adapted to measure the nano-optical properties of a variety of systems. Here, I will discuss the characterization of field distributions associated with plasmonic nano-particles, the spectroscopic properties of thermal near-fields, and phase separation in correlated electron systems.