UCLA College | Physical Sciences Chemistry & Biochemistry

PHYSICAL CHEMISTRY SEMINAR

Dr. Lu Wei

Division of Chemistry and Chemical Engineering
California Institute of Technology

Monday, November 20, 2023

4:00 PM | YH 4222

Mani L. Bhaumik Collaboratory -

Dongwon Yoo Seminar & Conference Hall

Functional Bond-Selective Microscopy for Subcellular Bioanalysis

Abstract: Innovations in optical spectroscopy and microscopy have revolutionized our understanding in live biological systems at the sub-cellular levels. In this talk, I will present our recent advances in developing and applying functional bond-selective spectro-microscopy for investigating subcellular biological activities with rich chemical information. In the first part of my talk, I will present the novel coupling of the stimulated Raman scattering (SRS) imaging, a nonlinear Raman imaging modality, with the newly developed chemical strategies for Raman-guided intracellular metabolic mapping; quantitative subcellular analysis of cytoplasmic aggregates; photo-activatable and photo-switchable SRS spectral-imaging; intracellular sensing through alkyne-HDX; and toward super-resolution chemical imaging. In the second part of my talk, I will present a new mid-infrared near-infrared two-photon imaging technique for bond-selective fluorescence imaging with single-molecule sensitivity.

Please contact isaiahgtz@chem.ucla.edu for additional information.