Physical Chemistry Seminar

Tuesday, October 2, 2018 | **11:00 am** | **Room 1315 Chemistry Building**

"Multifunctional and multidimensional super-resolution microscopy"

Professor Ke Xu

Department of Chemistry

University of California-Berkeley

Hosts: Profs. Randy Golsmith & Martin Zanni

Recent advances in super-resolution (fluorescence) microscopy have led to ~10 nm optical spatial resolution and thus profound impacts across different research fields. We are developing new approaches to advance beyond the structural (shape) information provided by super-resolution microscopy, and reveal multifunctional information of local physicochemical parameters, including chemical polarity, diffusivity, and reactivity, with nanometer resolution and single-molecule sensitivity, in living cells, chemical reactions, and surface processes. To achieve this endeavor of *functional* super-resolution microscopy, we are developing ultrahigh-throughput single-molecule spectroscopy and spectrally resolved super-resolution microscopy, and encoding local *functional* information into the spectral dimension of single-molecule fluorescence through environment-sensing fluorophores. By adding remarkably rich spectral and functional dimensions to the already powerful super-resolution microscopy, we thus open up exciting new ways to reveal fascinating local heterogeneities in biological and chemical systems at the single-molecule and nanoscale levels.

For information regarding his research, visit http://www.cchem.berkeley.edu/xuklab/people.html

Refreshments will be available prior to seminar at 10:45 a.m. in the Shain Atrium

Graduate Students can meet with the speaker in Room 8305F at 1:00 pm