



Monday, April 17 2017, 12:00 pm
Seaver Science Library, Room 150
SSC Auditorium next to the library

Professor Poul Petersen

Department of Chemistry
Cornell University

Giving Infrared Spectroscopy a Boost: New Methods for Studying Interfaces, Chirality, and Strongly Hydrogen-Bonded Complexes

Abstract:

Mid-infrared (IR) spectroscopy directly interrogates the chemical bonds molecules are composed of through their vibrational frequencies and thus offers a direct and local probe of molecular structure and nuclear motion. However, ultrafast IR spectroscopy is very challenging and thus heavily technology driven. Progress is driven by technical advances and the development of new laser sources and techniques that shed new light on existing problems, resolve controversies, and can lead to the discovery of new and unexpected phenomena. We are pushing the envelope of ultrafast mid-IR spectroscopic methods to probe the structure and dynamics at surface and in bulk systems, and further applying them to a series of novel systems. This includes new methods for studying chiral water structures in biological settings, surface-bound catalysts, and the ultrafast dynamics and vibrational couplings within strongly hydrogen-bonded proton transfer systems.

Hosted by Professor Anna Krylov

The scientific community is invited

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