ANALYTICAL SEMINAR

PROF. JOHN WRIGHT

Monday, Sept. 16
3:30 pm
1315 Chemistry

"Applications of Coherent Multidimensional Spectroscopy to Materials, Inorganic, Physical, and Analytical Chemistry"

This talk will present an intuitive understanding of a new family of coherent multidimensional spectroscopy (CMDS) that are electronic and vibrational analogues of multidimensional NMR methods. The methodology is based on creating a series of quantum mechanical superposition states called multiple quantum coherences (MQCs). These MQCs can include any combination of electronic and vibrational states. The talk will describe how the methodology can selectively isolate the spectra of specific sample components, increase spectral resolution, define coupling between states, line-narrow inhomogeneously broadened spectra, measure coherent and incoherent dynamics, and define molecular potential energy surfaces. Finally, the talk will provide examples of how the methodology can be used to characterize nanostructures, transition metal complexes, catalysts, and the oxygen evolving complex in photosystem II.

DEPARTMENT OF Chemistry