

JOINT CHEMISTRY AND OPTICS SEMINAR

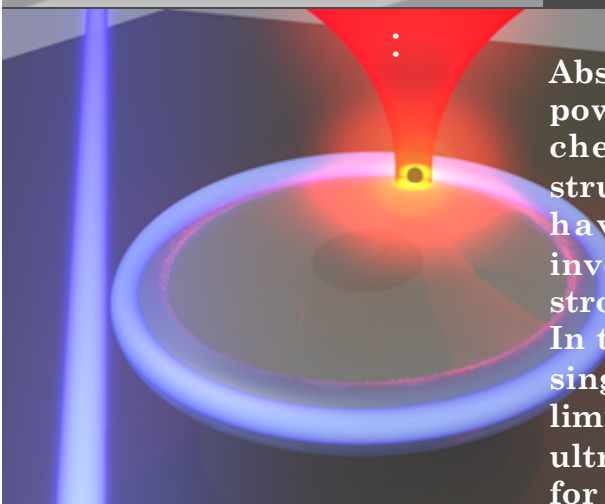
Guest Speaker:

Professor Randall Goldsmith
University of Wisconsin,
Madison
Department of Chemistry

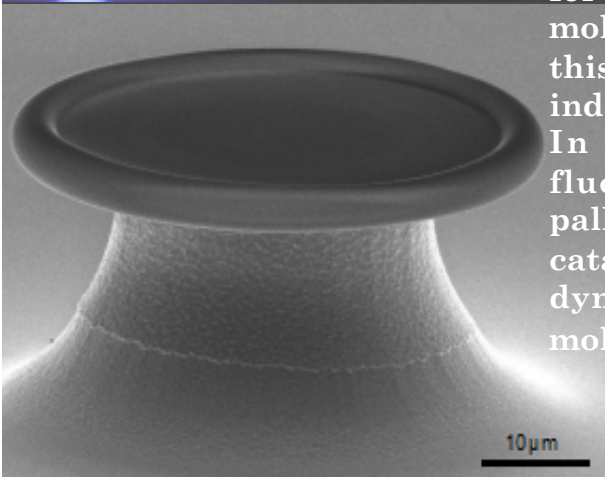


Monday, September 28, 2015
3:30 P.M., Goergen Hall 101
University of Rochester

Adventures in Single-Molecule
Spectroscopy: Optical Microresonators
and Mechanistic Organometallic
Chemistry



Abstract: Single-molecule measurements are a powerful means of uncovering unsynchronized chemical dynamics and revealing electronic structure. However, experimental limitations have generally restricted single-molecule investigations to situations where targets are strongly emissive and in an aqueous environment. In this seminar, I will describe our efforts to push single-molecule measurements to surpass these limits. In the first part, I will describe the use of ultrahigh-Q optical microresonators as platforms for spectroscopy of individual non-fluorescent molecules. As a demonstration, I will show how this method can probe the electronic structure of individual doped conjugated polymer molecules. In the second part, I will describe new fluorescently labelled operational molecular palladium catalysts. We will then show how these catalysts can be used to probe the heterogeneous dynamics of catalyst initiation at the single-molecule level.



Hosts: David McCamant, Chemistry
Nick Vamivakas, Optics

