



Suspension-based Measurements in Surface-Enhanced Raman Spectroscopy

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Date: Tuesday, October 8, 2013

Time: 12:30 – 1:00 p.m. Central (10:30 – 11:00 a.m. Pacific)

Location: 1000 MNTL at Illinois (KL 361 at UC Merced)

Abstract:

We have investigated the rational design of highly sensitive and chemically specific surface-enhanced Raman scattering (SERS) nanoprobes for biological sensing applications. We find that consideration of the optical scattering and absorption properties of nanoprobes in conjunction with their SERS properties is essential for maximizing signal in three-dimensional environments. Gold nanorods with tunable optical properties were synthesized and surface modified with biologically compatible polyelectrolytes. Raman analytes were electrostatically bound between layers of polyelectrolyte. Our results indicate that gold nanorods with localized surface plasmon resonances that are blue-shifted from the excitation wavelength achieve maximal signal intensity. Future work will involve embedding nanoprobes into tissue phantoms to further investigate the properties of SERS nanoprobes in turbid media as we move towards *in vivo* sensing.

Seminar Presented by:

 Center for Cellular Mechanics University of Illinois at Urbana-Champaign	 IGERT Integrative Graduate Education and Research Traineeship Cellular and Molecular Mechanics and BioNanotechnology	
	 M-CNTC NCI Alliance for Nanotechnology in Cancer Midwest Cancer Nanotechnology Training Center	

CNST University of Illinois Center for Nanoscale Science and Technology