

Dr. Emilie Ringe

Assistant Professor, Department of Materials Science and Nanoengineering

Department of Chemistry

Rice University

Friday, October 24, 2014

BB 3.04.18

3:00 PM



Optical and Electron Spectroscopy for Plasmonics

Interest in nanotechnology is driven by unprecedented means to tailor physical behavior via structure and composition. Most properties, including optical, catalytic, and electronic, can be fine tuned through choice of composition, size, and shape of nanoparticles. Characterization of such structure-function relationships are crucial to the development of novel applications such as biological sensors and plasmonic devices. This talk covers recent experimental advances in optical and electron microscopy aimed at the correlation of local and far-field mapping of the plasmon resonance in noble metal nanoparticles (Ag, Au, and alloys). In particular, high throughput single particle optical scattering approaches will be discussed, in addition to monochromated electron-energy loss spectroscopy and electron tomography. Results from such approaches will be discussed, including new quantitative understanding on the effects of size, composition, and shape on the resonance frequency, field enhancement and distribution, plasmon decay, and refractive index sensitivity.



Department Contact Information

Dr. Miguel Jose-Yacamán Miguel.jose@utsa.edu

Christella Robledo Christella.Robledo@utsa.edu

<http://physics.utsa.edu>