

Abstract Submitted  
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**Novel properties of nanostructured metal particles and films**  
SHENGLI ZOU, University of Central Florida — Using electromagnetic dynamics, we simulate the extinction spectra and enhanced electric fields of nanostructured metal nanoparticles and films. Their sensing and waveguide applications will be discussed. The sensing of molecules is achieved by the shift of the plasmon resonance wavelength of nanoparticles or enhanced Raman scattering or fluorescence signals, which are due to the enhanced local electric fields near or far away from the metal surface. The waveguide is achieved by the electromagnetic coupling in a one dimensional particle chain or a perforated metal film.

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