

Abstract Submitted
for the APR06 Meeting of
The American Physical Society

Plasma Cleaning Gold Nanorods to Make Better Biosensors PETER SCULLY, Department of Physics, Rice University, JASON HAFNER, Department of Physics, Department of Chemistry, Rice University — This study seeks to improve the efficacy of gold nanorods for use as biosensors. Noble metal particles have optical properties that differ from the bulk medium, in particular, they exhibit strong absorbance of light at certain wavelengths. The wavelength at which this occurs depends upon the dielectric properties of both the particles and the medium. This opens up the possibility of using these nanoparticles as biological sensors. The binding of molecules in the vicinity of a noble metal nanoparticle causes a change in the medium dielectric which can be detected by a peak shift in the absorption spectrum of the particles. We believe the mPEG-SH, a stabilizing agent, is lowering the sensitivity of the dielectric dependence and that by removing the mPEG-SH, sensitivity can be increased.

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Date submitted: 24 Feb 2006

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