Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Template assisted synthesis and optical properties of gold nanoparticles.[1] PETRU FODOR, VINCENZO LASALVIA, Cleveland State University — A hybrid nanofabrication method (interference lithography + self assembly) was explored for the fabrication of arrays of gold nanoparticles. To ensure the uniformity of the nanoparticles, a template assisted synthesis was used in which the gold is electrodeposited in the pores of anodized aluminum membranes. The spacing between the pores and their ordering is controlled in the first fabrication step of the template in which laser lithography and metal deposition are used to produce aluminum films with controlled strain profiles. The diameter of the pores produced after anodizing the aluminum film in acidic solution determines the diameter of the gold particles, while their aspect ratio is controlled through the deposition time. Optical absorbance spectroscopy is used to evaluate the ability to tune the nanoparticles plasmon resonance spectra through control over their size and aspect ratio.

[1]This work was supported through a Cottrell College Science Award ID 7347 from the Research Corporation for Science Advancement.

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Date submitted: 20 Nov 2008 Electronic form version 1.4