

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**Exciton-plasmon and spin-plasmon interactions in hybrid semiconductor-metal nanostructures** ALEXANDER GOVOROV, Department of Physics and Astronomy, Ohio University, Athens, OH, 45701 — Coulomb and electromagnetic interactions between excitons and plasmons in nanocrystals cause several effects: energy transfer between nanoparticles, plasmon enhancement, Lamb shifts of exciton lines, Fano interference. In a complex composed of semiconductor quantum dot and metal nanoparticle, plasmons interact with spin-polarized excitons. This interaction leads to the formation of coupled spin-plasmon excitations and to spin-dependent Fano resonances. If an exciton-plasmon system includes chiral elements (chiral molecules or nanocrystals), the exciton-plasmon interaction is able to create new plasmonic lines in circular dichroism spectra.

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Date submitted: 23 Nov 2010

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