

Abstract Submitted
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Plasmonic properties of the metallic nanosphere/thin wire system. FENG HAO, P. NORDLANDER, Rice University — The plasmon hybridization method [1] is applied to a metallic nanosphere positioned near an infinitely long metallic wire. The plasmon resonances of the sphere are found to be shifted and to depend on the polarization of the incident light. In the limit of a thin wire, a virtual state consisting of propagating low energy wire plasmons is induced. The state is similar in nature to the virtual thin film state recently predicted and observed for a nanosphere near a thin metallic film [2].

[1] E. Prodan and P. Nordlander, J. Chem. Phys. 120(2004)5444-5454.

[2] F. Le, N. Z. Lwin, J.M. Steele, M. Kall, N.J. Halas, and P. Nordlander, Nano Lett. 5(2005)2009-2013.

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