

# **Nonlinear absorption tuning by composition control in bimetallic plasmonic nanoprism arrays.**

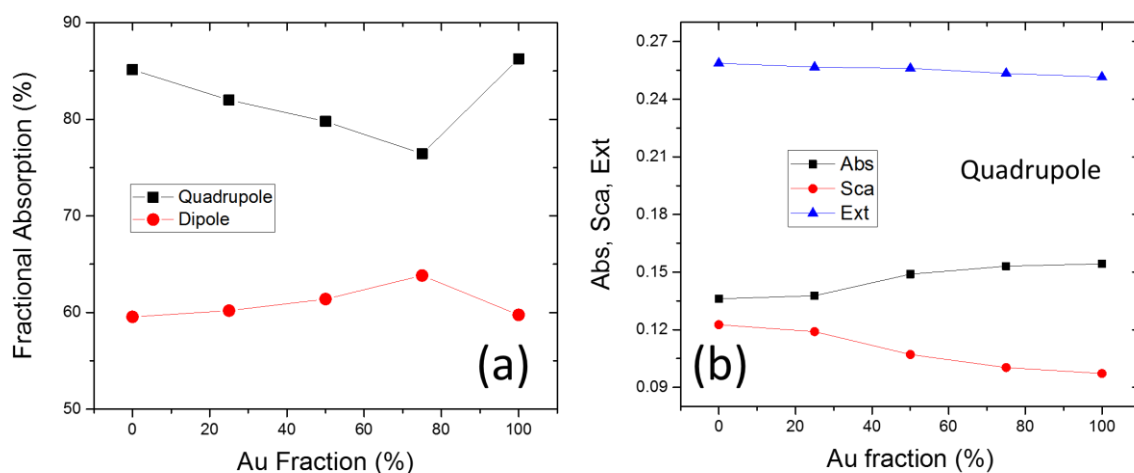
Tiziana Cesca<sup>1\*</sup>, Niccolò Michieli<sup>1</sup>, Boris Kalinic<sup>1</sup>, Ana Sanchez-Espinoza<sup>1,2</sup>, Marco Rattin<sup>1</sup>, Valentina Russo<sup>1</sup>, Valentina Mattarello<sup>1</sup>, Carlo Scian<sup>1</sup>, Paolo Mazzoldi<sup>1</sup>, and Giovanni Mattei<sup>1</sup>

<sup>1</sup>*Physics and Astronomy Department and CNISM, University of Padova, via Marzolo 8, I-35131 Padova, Italy.*

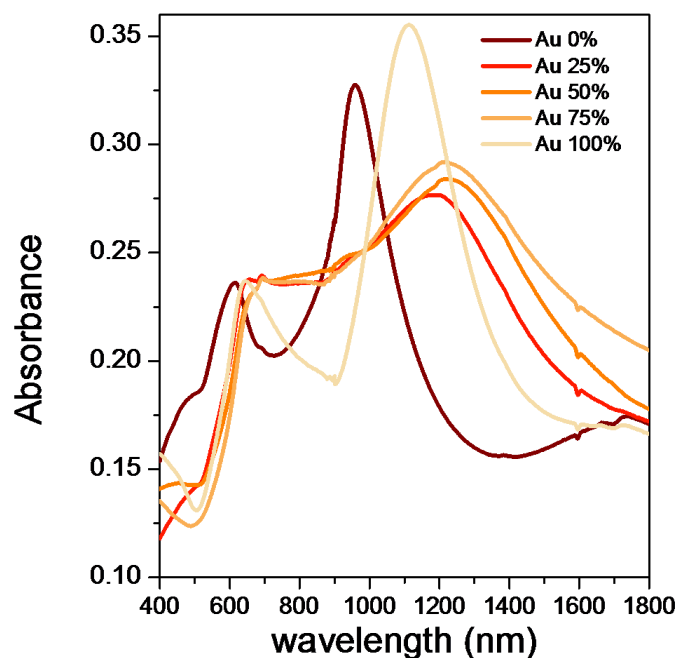
<sup>2</sup>*Centro de Investigación Científica y de Educación Superior de Ensenada, Unidad Monterrey, Alianza Sur No. 105, Nueva Carretera Aeropuerto Km 9.5, Apocada, 66629, N.L., Mexico.*

\*E-mail: [tiziana.cesca@unipd.it](mailto:tiziana.cesca@unipd.it)

**SUPPORTING INFORMATION**



**Figure S1:** FEM simulations: (a) fractional absorption of the lower-most layer with height of 17.5 nm from the prism base (i.e., 25% of the total height) normalized to the total absorption for all the synthesized nanoprism arrays. In the case of quadrupolar resonance, the lower-most layer absorption dominates with a fractional absorption of more than 80%. (b) For the quadrupolar resonance, decomposition of the extinction in absorption and scattering.



**Figure S2:** Experimental extinction spectra of all the synthesized nanoprism arrays. The legend reports the Au fraction in the nanoprisms' composition (i.e., the relative thickness of the Au layer with respect to the total height of the bi-layered (Ag+Au) nanoprisms).