Supplementary Material (ESI) for PCCP

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Supporting Information

Probing the surface-enhanced Raman scattering properties of Au-Ag nanocages at two different excitation wavelengths

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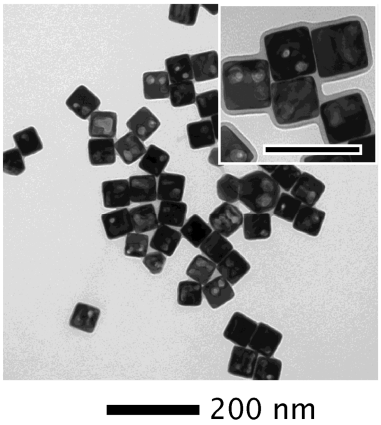

Fig. S1 TEM image of the Au-Ag nanocages with an LSPR of 585 nm and a composition of 73% Ag and 27% Au. The scale bar is 100 nm in the inset.

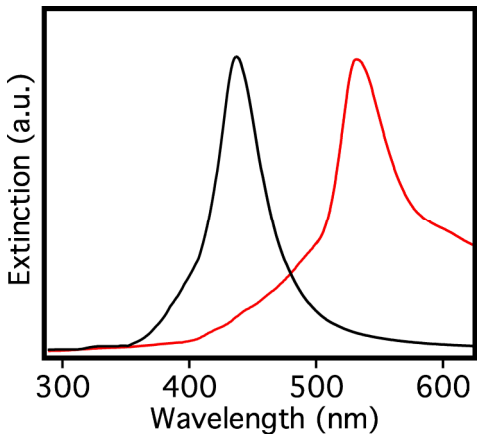

Fig. S2 UV-vis-NIR extinction spectra recorded from the aqueous suspensions of Ag (black) and Au (red) colloids used in this study. Both colloids had an average diameter of ~50 nm (53 ± 9 nm for the Ag colloid and 55 ± 7 nm for the Au colloid).

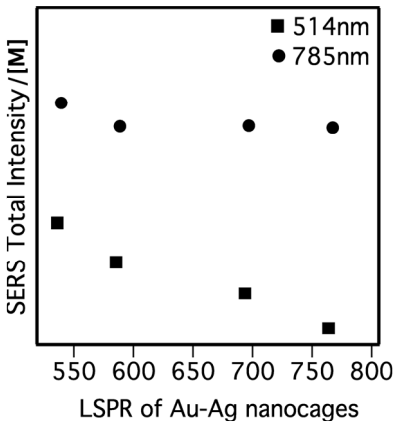

Fig. S3 The total SERS intensity measured from 1,4-benzenedithiol (1,4-BDT) on Au-Ag nanocages as a function of the LSPR of the Au-Ag nanocage. The SERS total intensities were normalized with respect to nanoparticle concentration. With the 514 nm excitation the intensities drop as the LSPR approaches the near-infrared due to the increasing Au content of the nanocages. For the 785 nm excitation the intensities initially decrease from the nanocages with an LSPR peak at 525 nm to the nanocages with an LSPR peak at 585 nm, but then are relatively constant. λ_{ex} = 514 nm, P_{laser} = 3.3 mW, and t = 60 s and λ_{ex} = 785 nm, P_{laser} = 5.8 mW, and t = 60 s.