Supplementary Information

Nanometal Skin of Plasmonic Heterostructures for Highly Efficient Near-Field Scattering Probes

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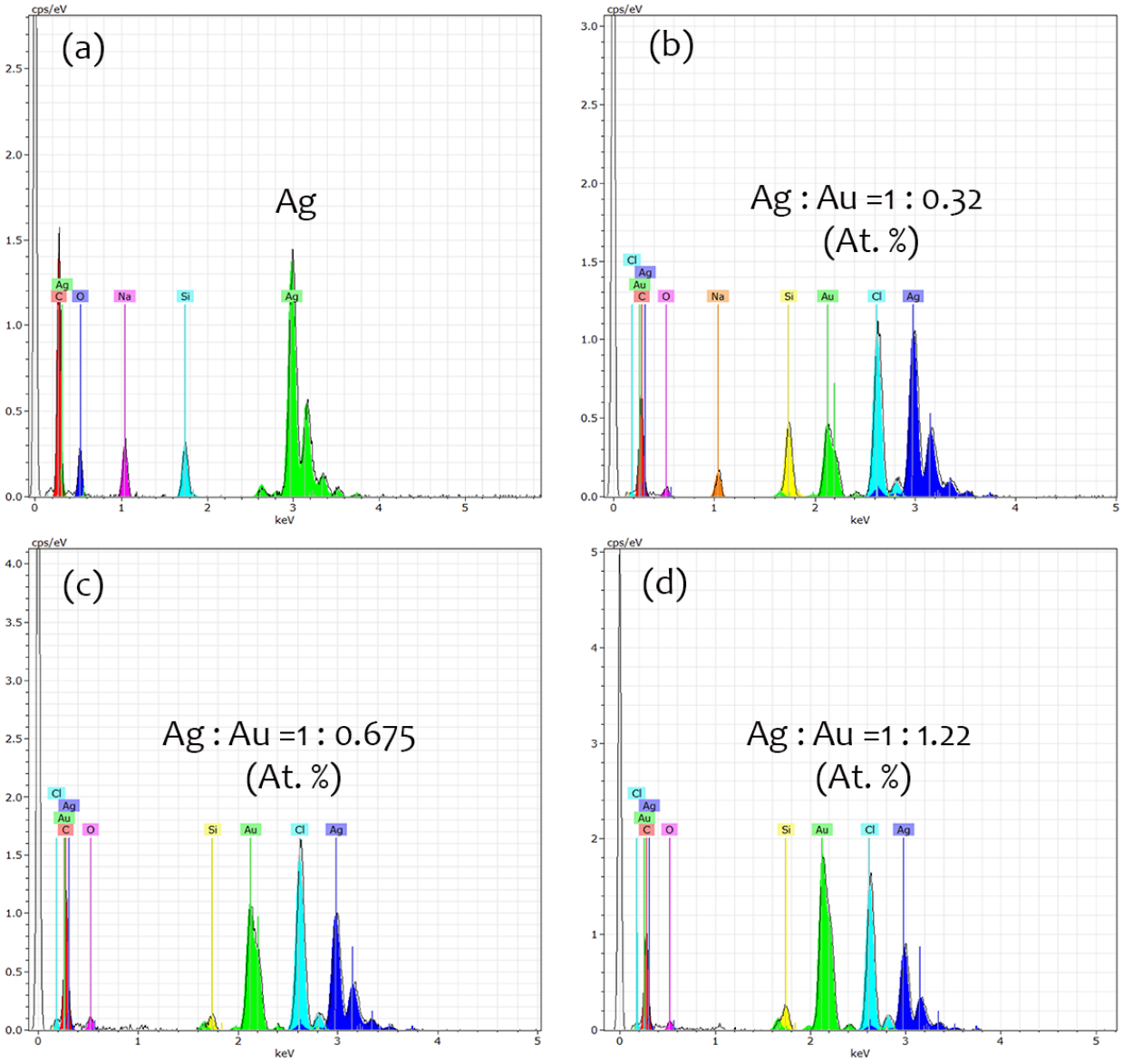

Figure S1: (a) Energy dispersive X-ray (EDX) spectrum of a film obtained from BCP micelles loaded with AgNPs. (b) EDX spectrum from BCP micelles loaded with AgNPs, then decorated with AuNPs in molar ratio Ag : Au = 1 : 0.31, which is in good agreement with the atomic ratio determined from deconvolution of EDX peaks, equal to 1 : 0.32. (c) EDX spectrum from BCP micelles loaded with AgNPs, then decorated with AuNPs in molar ratio Ag : Au = 1 : 0.60, in good agreement with the EDX atomic ratio equal to 1 : 0.675. (d) EDX spectrum from BCP micelles loaded with AgNPs, decorated with AuNPs in molar ratio Ag : Au = 1 : 1.08, in good agreement with the EDX atomic ratio equal to 1 : 1.22. For all samples, a silicon wafer was used as supporting substrate.

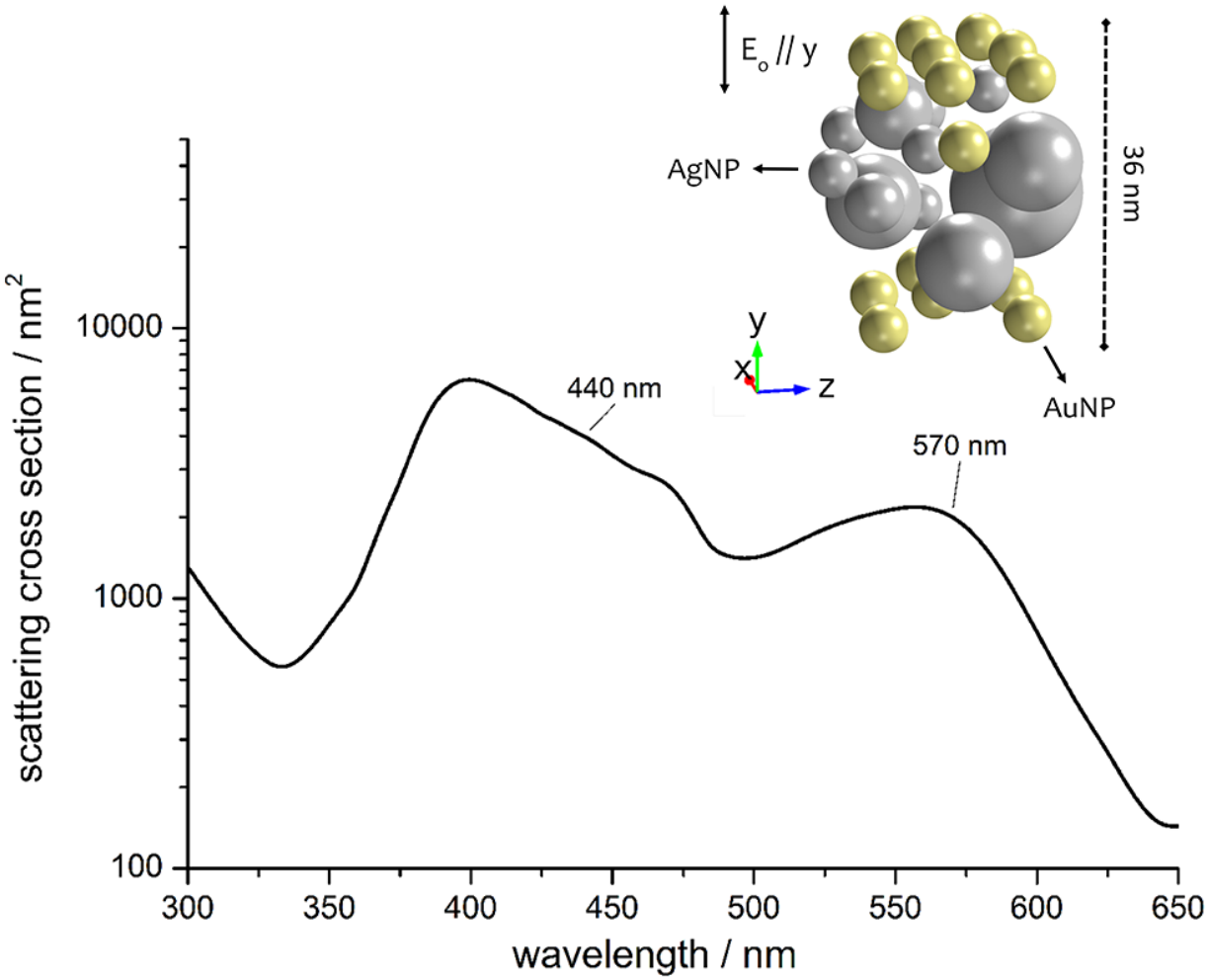

Figure S2: Scattering cross section spectrum calculated for the cluster geometry depicted in the inset and consisting of mixed Ag- and Au-NPs, for plane wave excitation with vertical polarization. The far-field optical response here highlighted is in good *qualitative* agreement with the experimental optical response, in particular, in relation to the emergence of a lower energy band (550-570 nm) due to hybridization of AgNPs and AuNPs response. No relevant variation is found in the case on Ag- and Au-NPs mixed with more heterogeneity. The geometry of the cluster was tentatively extrapolated from the various morphological characterizations. All AgNPs were < 15 nm and AuNPs had diameters of 5 nm.