

Supporting Information

Gold Nanoparticle Superlattices: Novel Surface Enhanced Raman Scattering Active Substrates

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Figure S1. Photograph of the set-up used for the formation of Au@SGAN and Au@MSA SLs. Inset shows a magnified view of the plastic vessel used for the SL formation. The grown SL film is seen faintly.

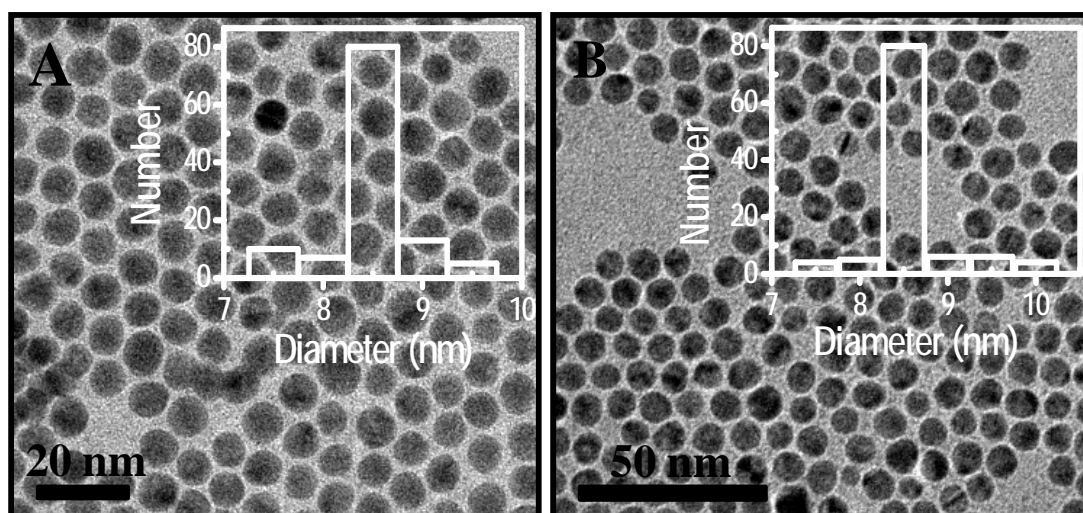


Figure S2. HRTEM images of isolated (A) Au@SGAN and (B) Au@MSA nanoparticles. Inset shows the corresponding histogram showing that the average particle size is 8.5 nm in each.

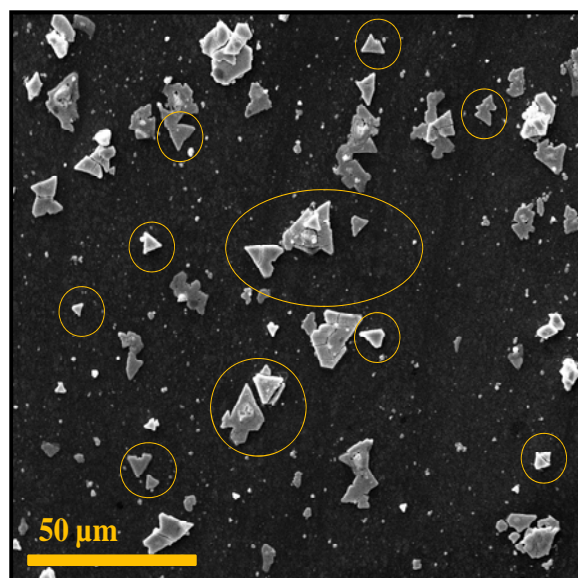


Figure S3. Large area SEM image of Au@MSA SL triangles. The triangular morphologies are marked by circles and ellipses.

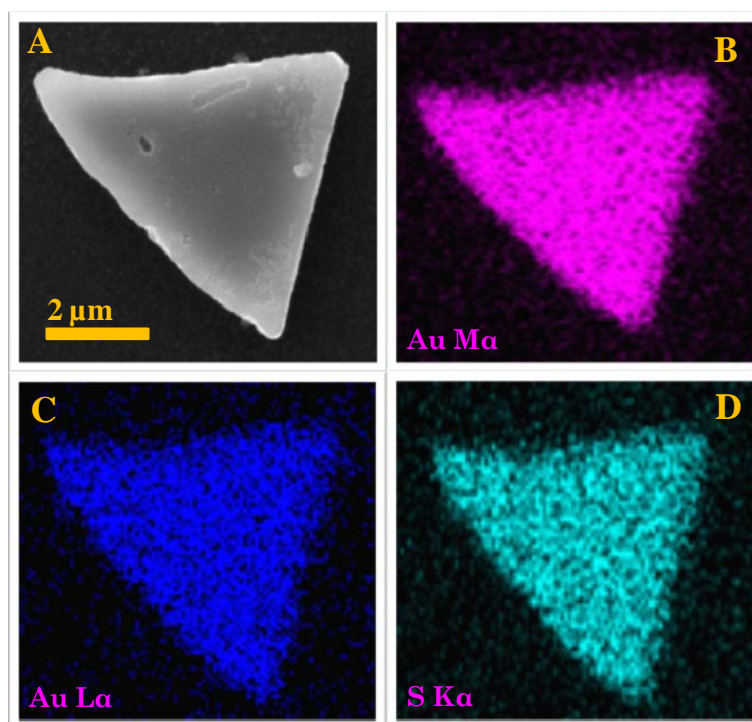


Figure S4. SEM image of an Au@MSA SL triangle (A). The EDAX maps of Au Mα, Au Lα and S Kα of the triangle are given in B, C and D.

Raman band assignment	Raman shift (cm ⁻¹)
ring C-C stretching	1627
ring C-C stretching	1592
ring C-C stretching	1542
+ ring deformation	1484
ring C-C stretching	1450
N-phenyl stretching	1379
ring C-C stretching	1305
ring C-H bend (II)	1186
ring C-H bend (II)	1131
ring skeletal vib. of radical orientation	992
ring skeletal vib. of radical orientation	922
ring C-H bend (⊥)	819
ring C-H bend (⊥)	768
ring C-H bend (⊥)	738
ring skeletal vib. of radical orientation	633
ring skeletal vib. of radical orientation	572
ring skeletal vib. of radical orientation	538
Ph-C+-Ph bend(⊥)	432
Ph-C+-Ph bend(II)	348
Breathing of central bonds	232

(II) and (⊥) means in-plane and out-of-plane, respectively

Table 1. Assignment of Raman bands of the SERS spectrum of CV shown in Figures 4 and 6.

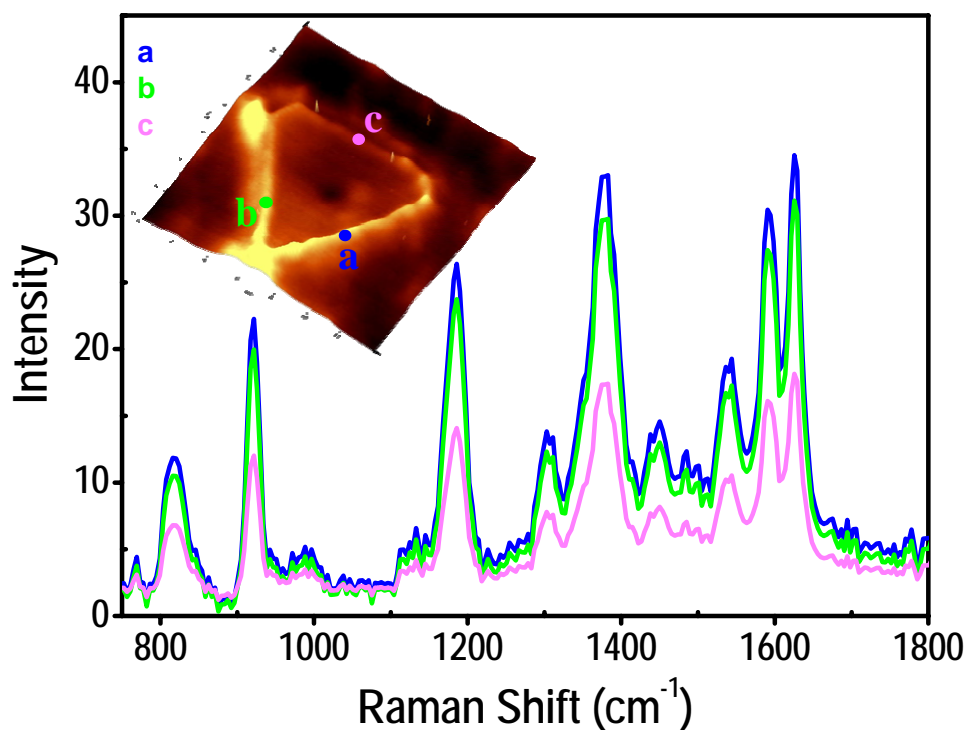


Figure S5. Raman spectra collected from three different edges of Au@MSA SL triangle shown in inset.

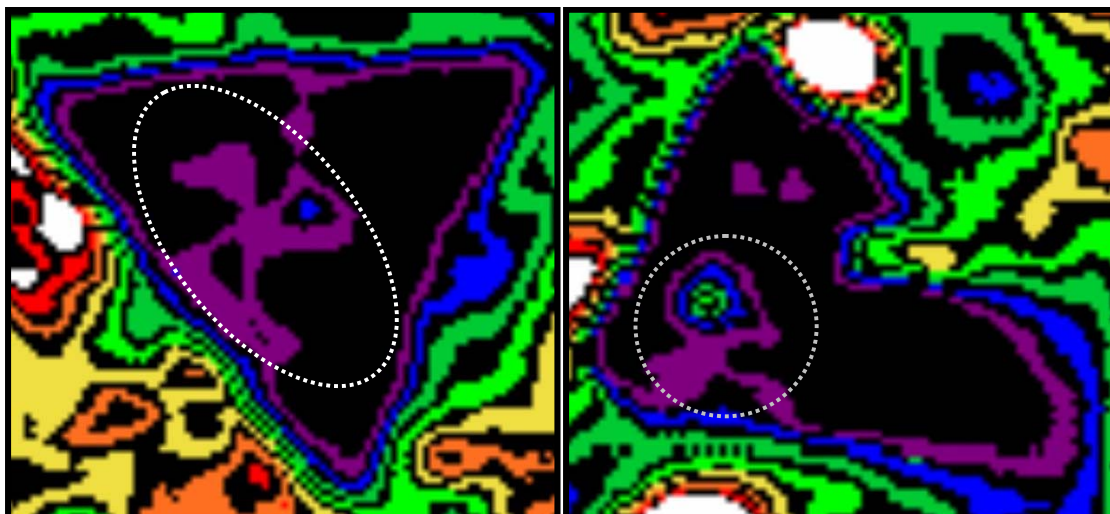


Figure S5. Color coded Raman images of Au@SGAN SL triangles. The defective area on the surface of the triangles shown in white circle shows more enhancement than a flat surface.