Electronic Supplementary Material

Fluorescent Superlattices of Gold Nanoparticles: A New Class of Functional Materials

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Supporting information to DOI 10.1007/s12274-009-9020-0

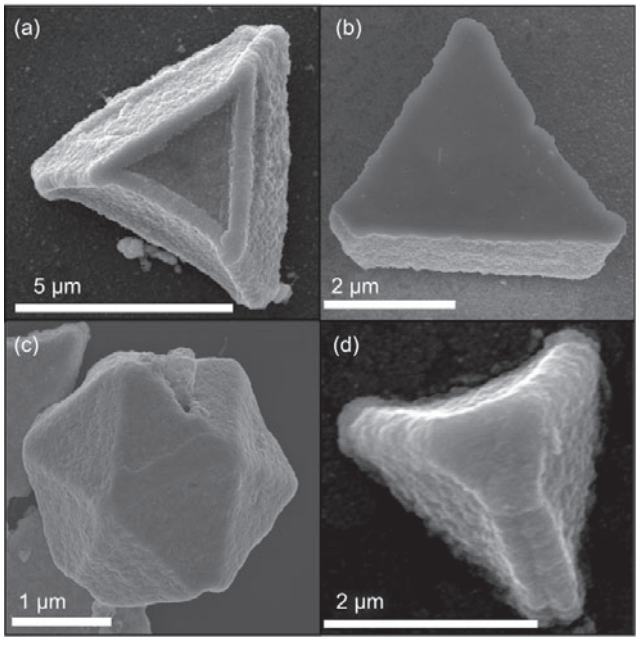

Figure S-1 FESEM images of the superlattice crystals showing different morphologies (a)–(d)

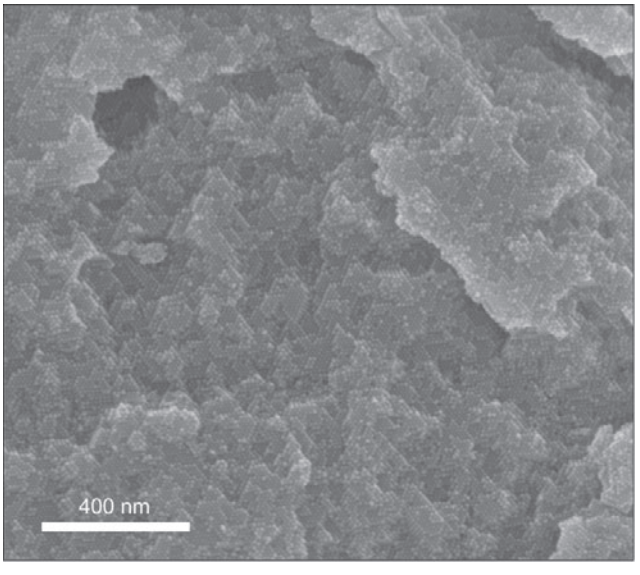

Figure S-2 Magnified image of the surface of a superlattice crystal, showing defects

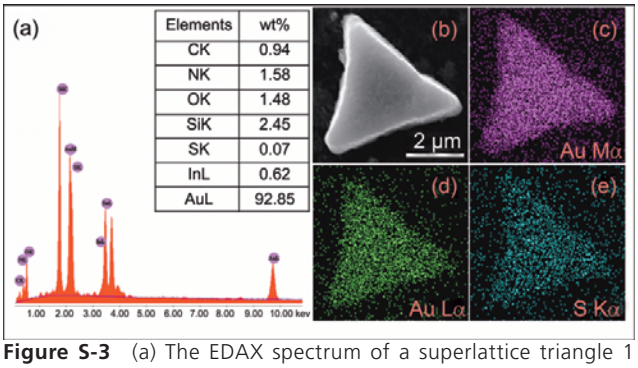

Figure S-3 (a) The EDAX spectrum of a superlattice triangle 1 collected from the crystal shown in (b). The EDAX maps of Au Mα, Au Lα and S Kα of triangle 1 are given in (c), (d) and (e), respectively

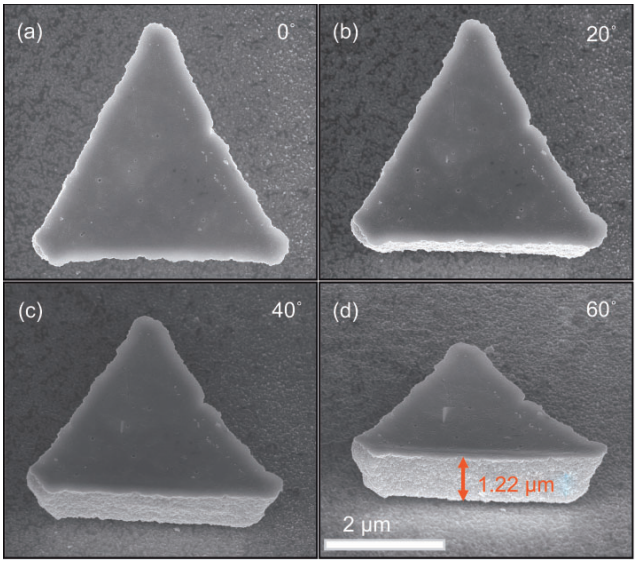

Figure S-4 FESEM images of superlattice triangles at different tilt angles. The scale bar in (d) applies to all the images

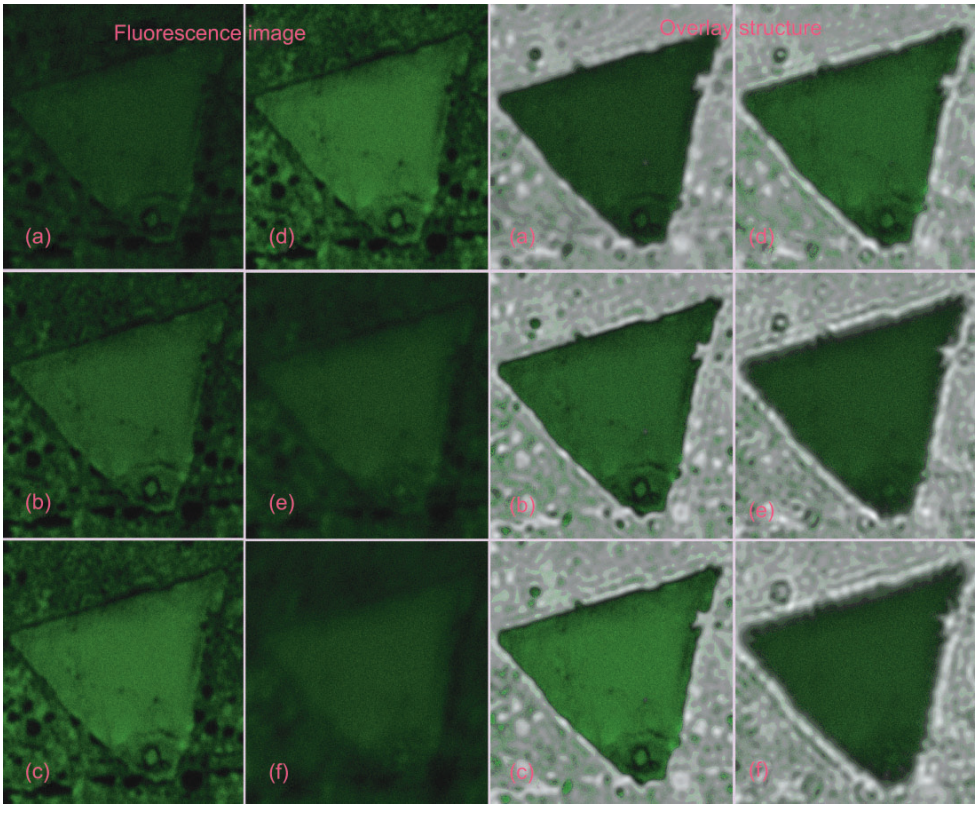

Figure S-5 Confocal fluorescence images (*z*-scan) and corresponding overlay structures of superlattice triangle 1 excited with a 458-nm laser, which was the shortest wavelength available in the microscope. The fluorescence images of the superlattice triangles were collected by integrating the intensities in the 500–650 nm window

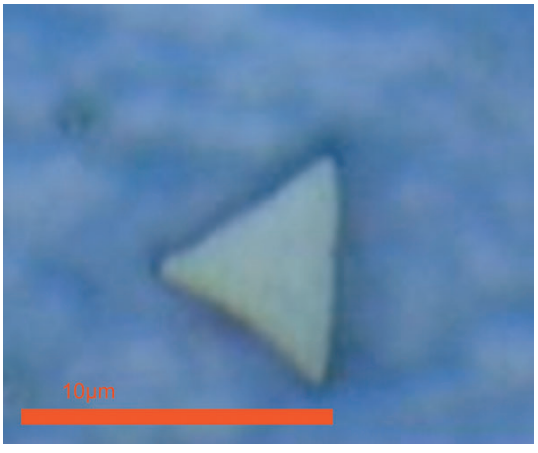

Figure S-6 Optical image of a single crystal taken under white light illumination. The average edge length of the crystal is found to be about 6 μm

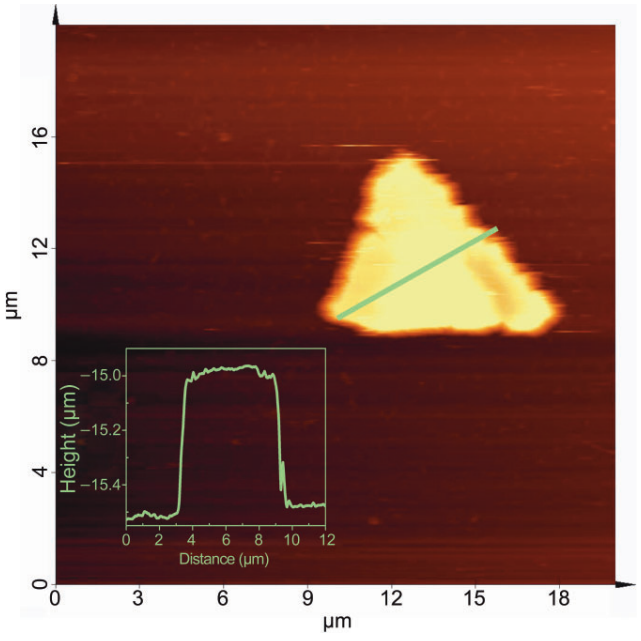

Figure S-7 Contact mode AFM image (20 μm×20 μm) of a superlattice triangle. Inset shows the height profile of crystal along the dashed line drawn in the image

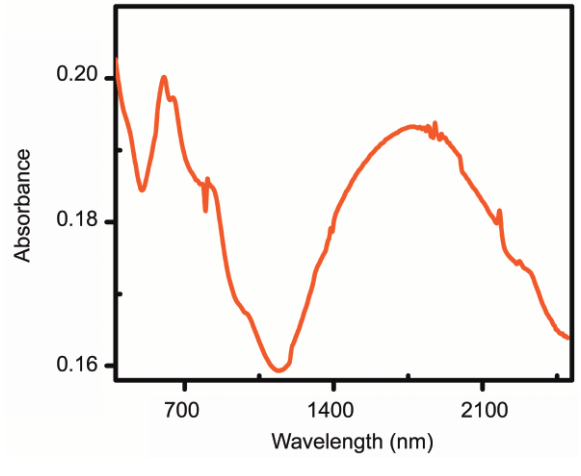

Figure S-8 UV/vis/NIR absorption spectrum of the Au@SGAN/SGD superlattice film

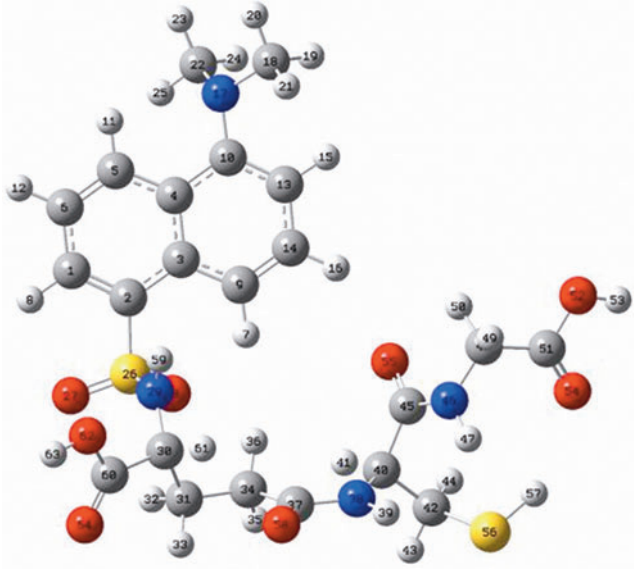

Figure S-9 Energy minimized structure of the DGSH molecule optimized by semi empirical Austin Model 1 (AM1) calculations using Gaussian-03