



Silver nanocubes and gold nanocages.

Synthesis and optical properties

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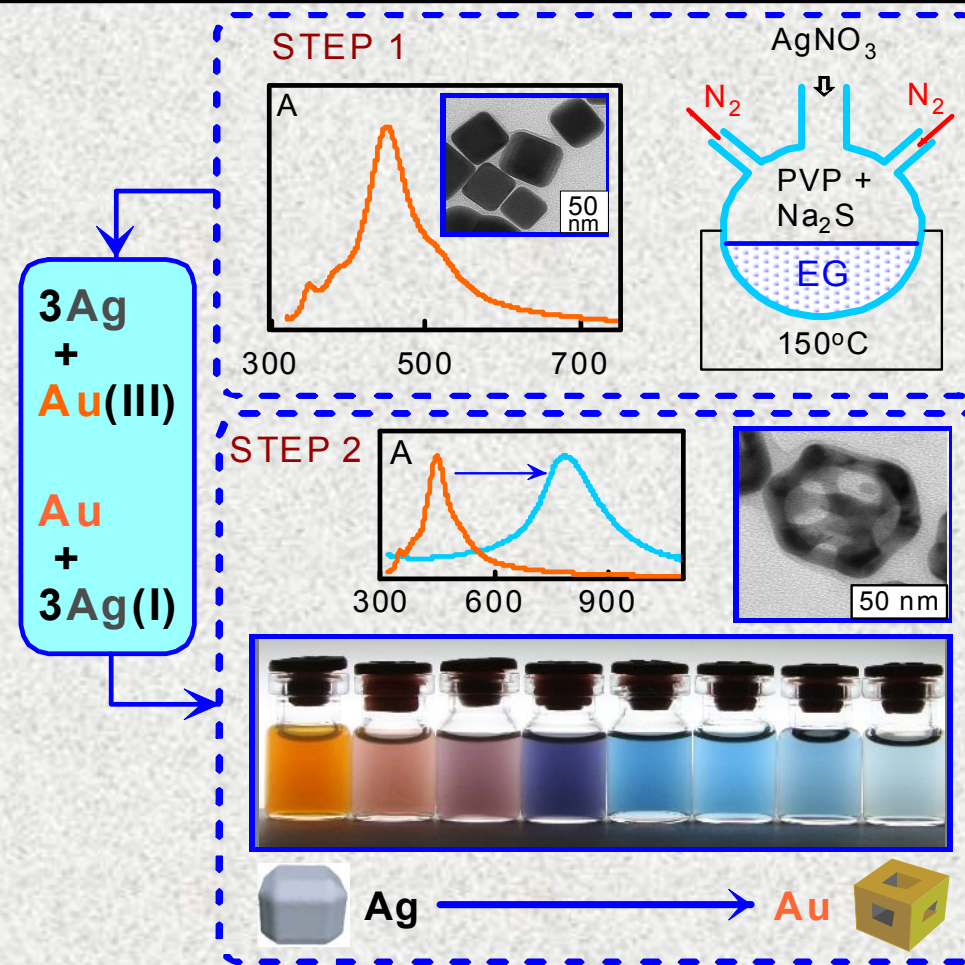
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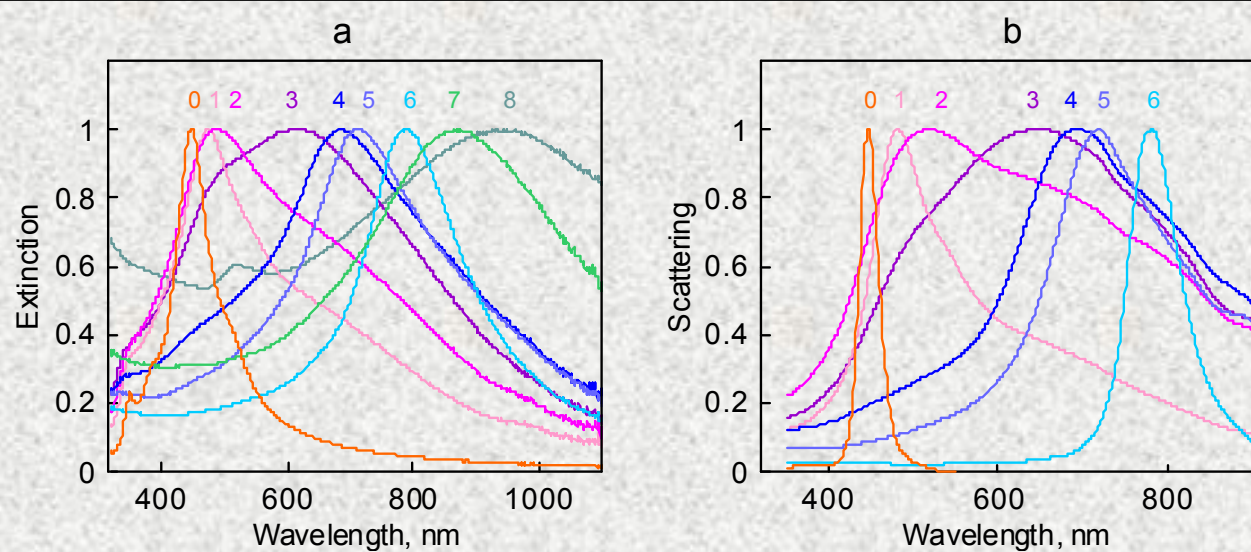


Abstract

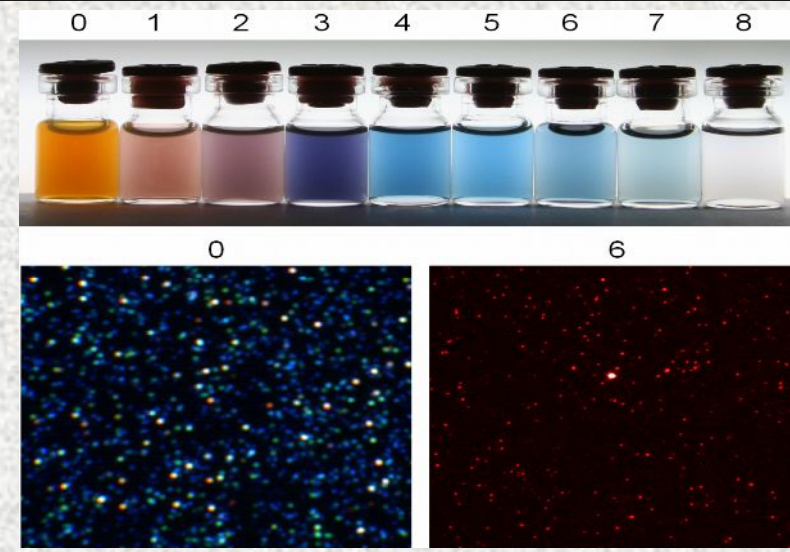
In this poster the experimental data on fabrication and optical properties of silver nanocubes and gold/silver nanostructures based on silver cube templates is presented. The silver cubes were obtained using polyol synthesis with a sulfide-mediated reduction of silver nitrate by ethylene glycol in the presence of poly(vinylpyrrolidone). A galvanic replacement method was used to fabricate gold/silver nanoparticles of various structures, starting from silver/gold alloy particles and ending by target gold nanocages. The gold nanocages formation was controlled by shifts of the extinction and differential light scattering plasmon resonances, the transmission and scanning electron microscopy, the dark-field microscope light scattering, and by visual inspection of colloid colors.



Two-step scheme for the synthesis of gold nanocages.



(a) Extinction and (b) differential light scattering spectra of the nanocages samples



The color change of the silver colloid in the process of the formation (and destruction) of the gold nanocages. White light scattering by silver nanocubes (the color blue) and gold nanocages (the color red)

Multicolor dot-assay using Au/Ag nanocages

Basic steps:

Dropping

Blocking

Trapping

