

Electronic Supplementary Information (ESI)

Catalytic nanorattle of Au@hollow silica: Towards a poison-resistant nanocatalyst

Si-Han Wu, Chih-Ta Tseng, Yu-Shen Lin, Cheng-Han Lin, Yann Hung and Chung-Yuan Mou*

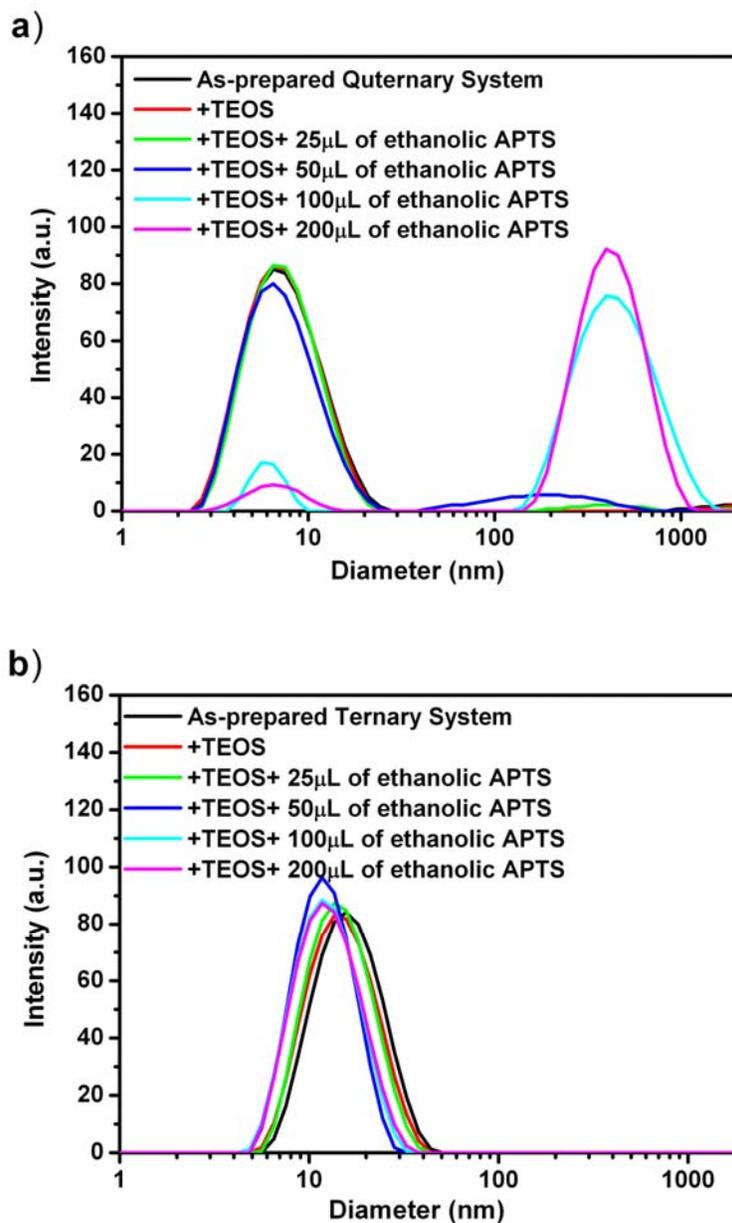


Figure S1. Room temperature hydrodynamic size distribution of micelles obtained from (a) quaternary w/o microemulsion (water, oil, surfactant, and co-surfactant) and (b) ternary w/o microemulsion (water, oil, and surfactant) in different conditions. The composition of the quaternary w/o microemulsion is described in ref. [23]).

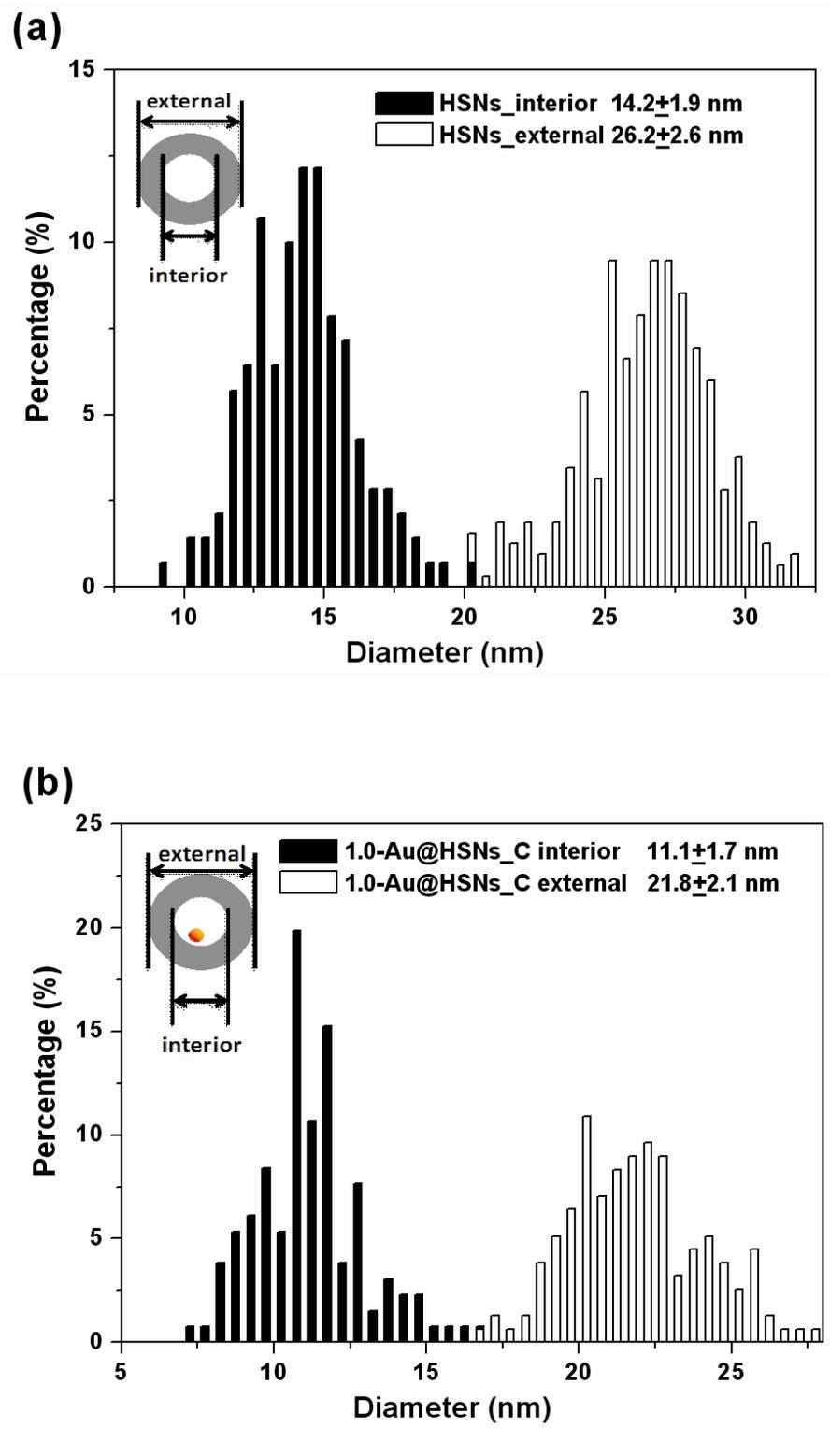


Figure S2. Size distribution histograms of interior and external diameter of (a) HSNs and (b) 1.0-Au@HSNs_C.

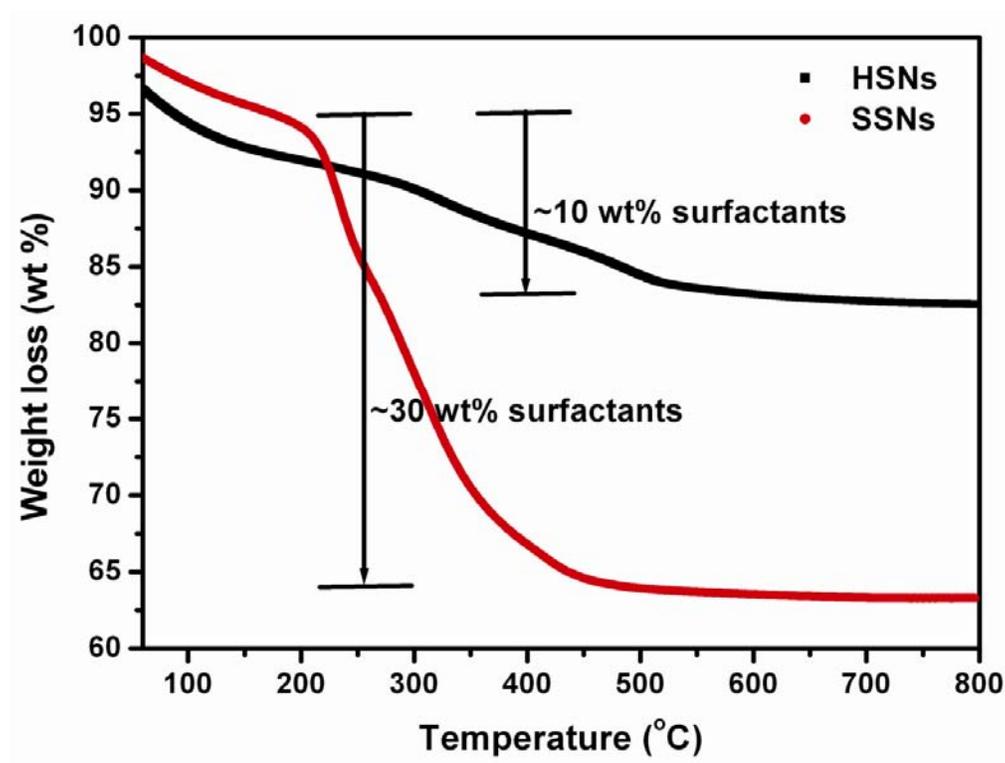


Figure S3. Weight loss profiles of as-synthesized SSNs without D.I. water washing and HSNs after D.I. water washing obtained from thermogravimetric analysis (TGA).

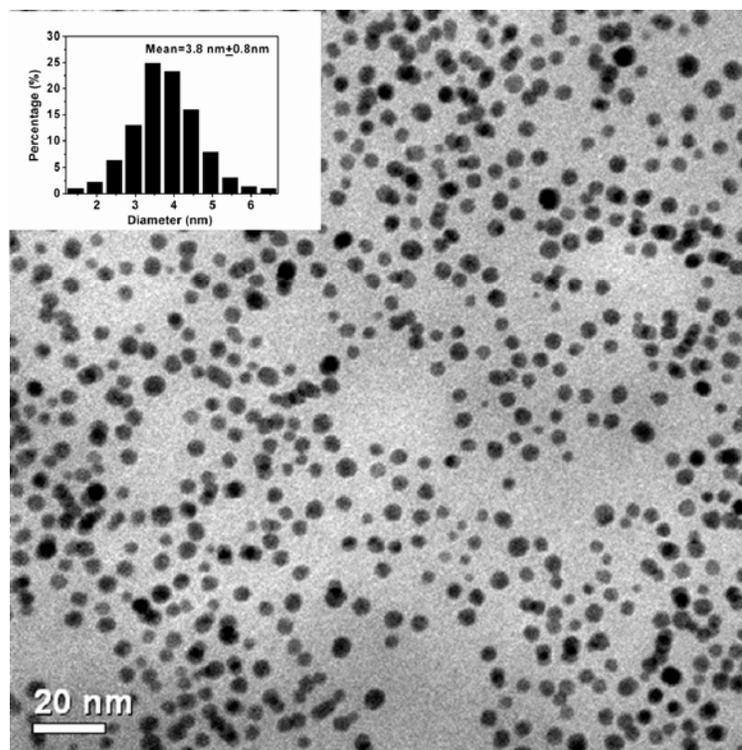


Figure S4. TEM image and size distribution histogram of Au@citrate nanoparticles.

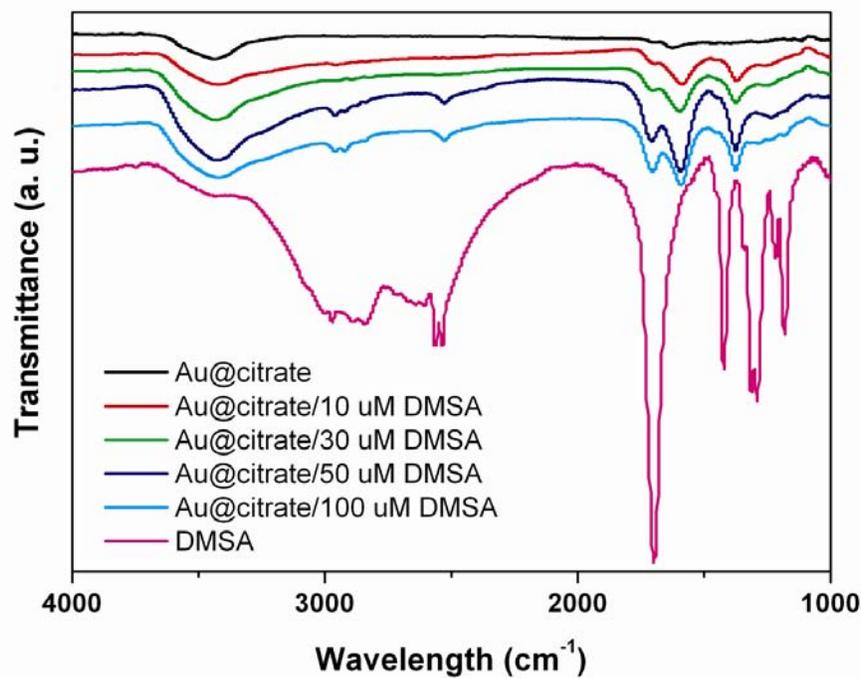


Figure S5. FT-IR spectra of Au@citrate nanoparticles in the presence of various amounts of DMSA. The peaks at 2540 and 2560 cm⁻¹ represent the S-H stretching vibration mode, that disappear below 30 μ M of DMSA, indicating the formation of Au-S bond. However, the peaks appear again at higher concentration of DMSA, above 50 μ M, implying there are free DMSA in addition to those bound to gold surface.

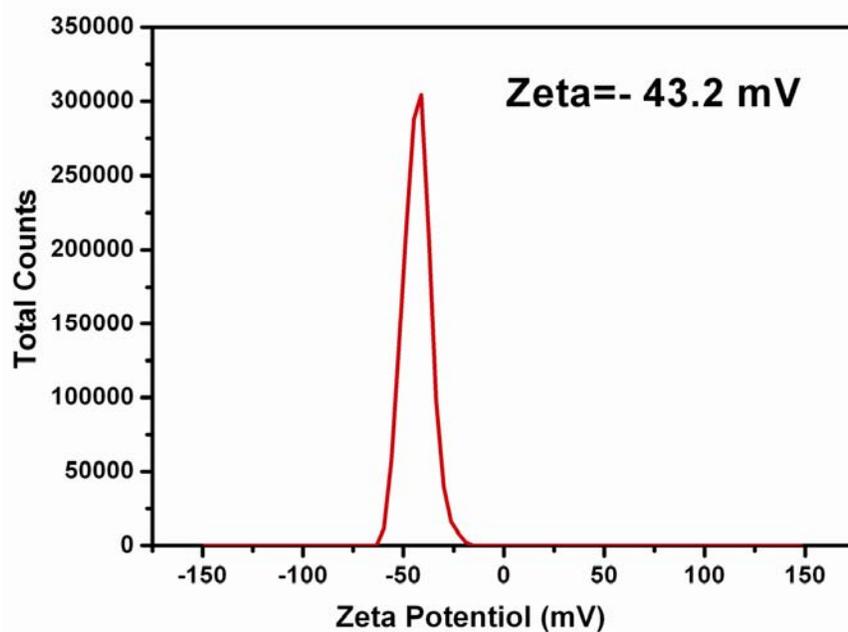


Figure S6. Zeta potential distribution of 1.0-Au@HSNs_C suspended in aqueous sodium hydroxide solution (pH=10).