

Supporting Information

Gold Nanoparticle Doped Hollow SnO₂ Supersymmetric Nanostructures for Improved Photocatalyst

Hongjun You,^a Rui Liu,^b Congcong Liang,^a Shengchun Yang,^{a*} Fei Wang,^{a*}

Xuegang Lu,^a and Bingjun Ding^a

^a MOE Key Laboratory for Non-equilibrium Synthesis and Modulation of Condensed Matter,
School of Science, Xi'an Jiaotong University, Shanxi 710049, P. R. China

^b School of Chemistry and Chemical Engineering, Shanxi Datong University, Shanxi 037009, P. R.

China

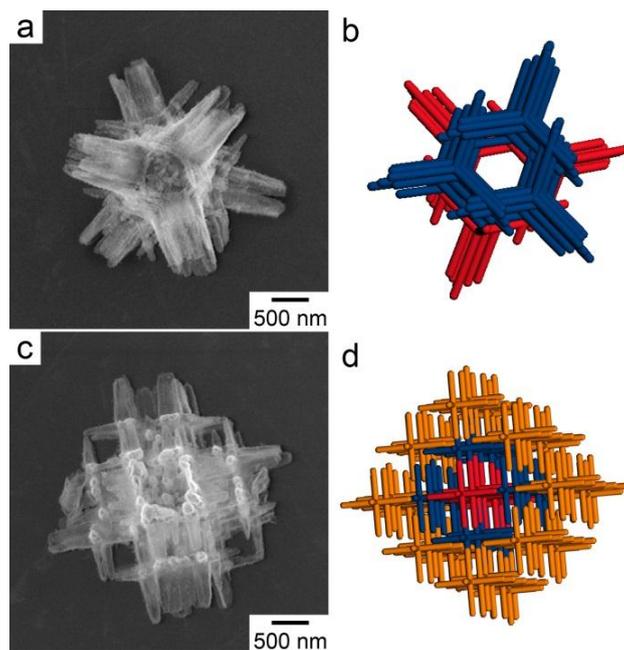


Fig. S1 Two kinds of self-assembly behavior of uniform hollow SnO₂ hexapods and their correlated schematic images. (a,b) The extension of the pods presents a staggered form. (c,d) The stretch of the branches is perpendicular to the stem.

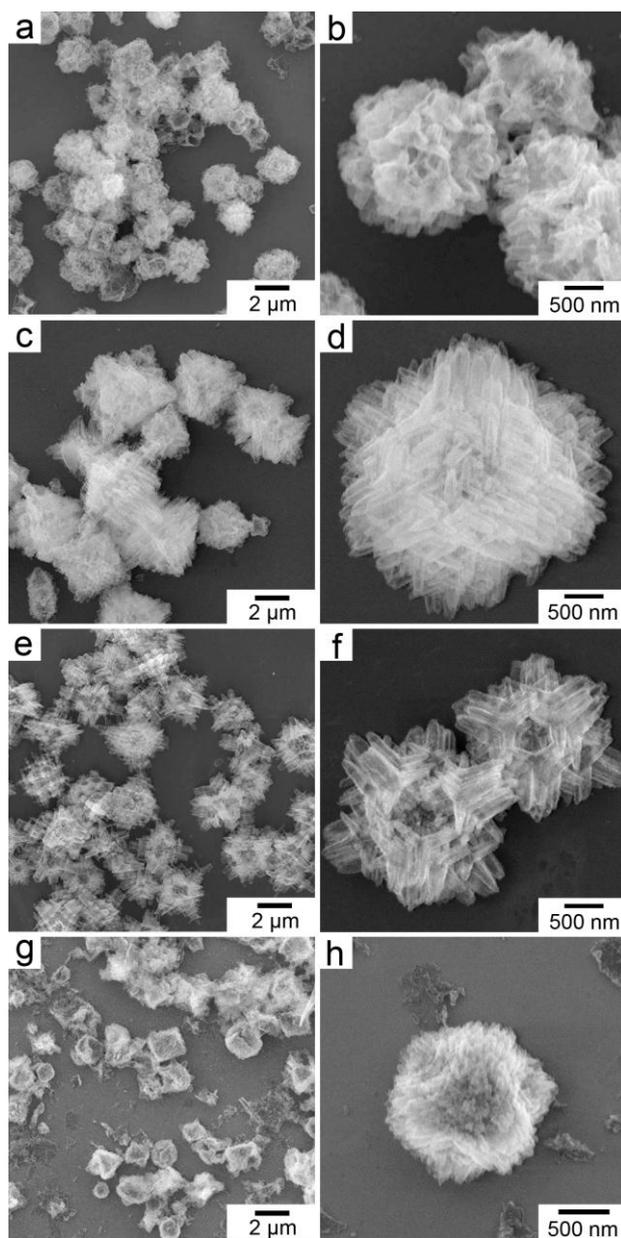


Fig. S2 SEM images of SnO₂ particles synthesized with different amount of PEG: (a,b) without PEG, (c,d) 0.25 g PEG, (e,f) 1 g PEG, and (g,h) 2 g, PEG.

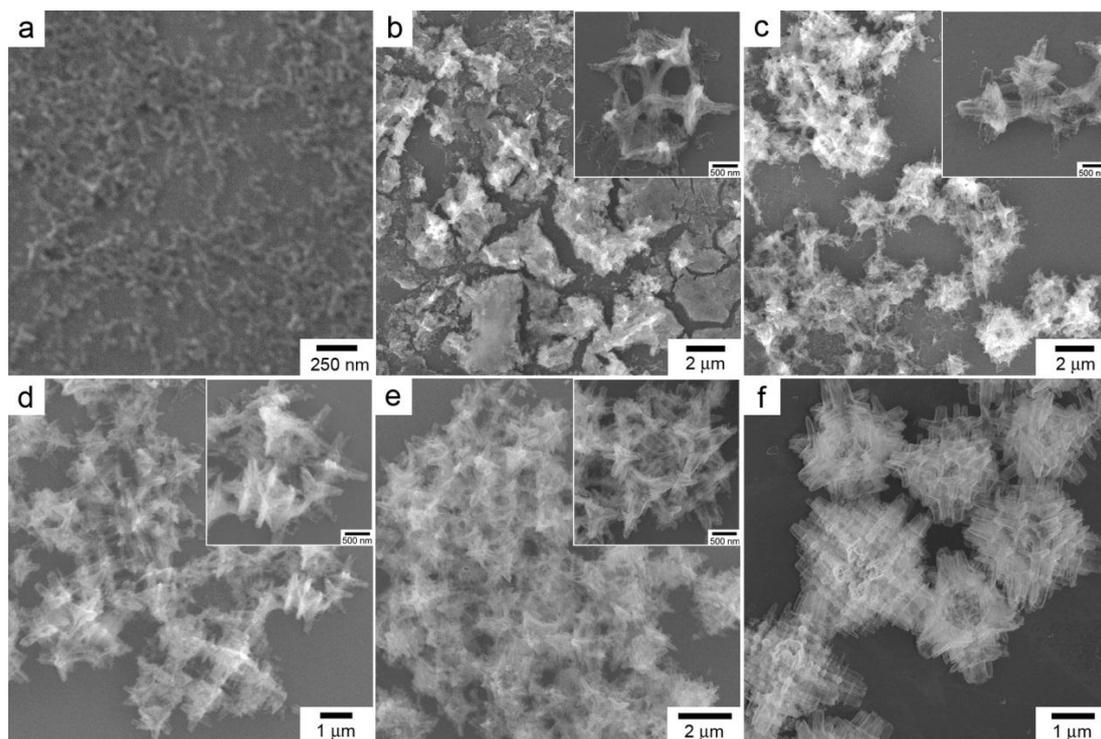


Fig. S3 SEM images of the samples synthesized under different reaction times: (a), 0 min; (b), 1 min; (c), 3 min; (d), 10 min; (e), 15 min and (f), 40 min. The inserts in (b)-(e) show the enlarged images of the corresponding samples.

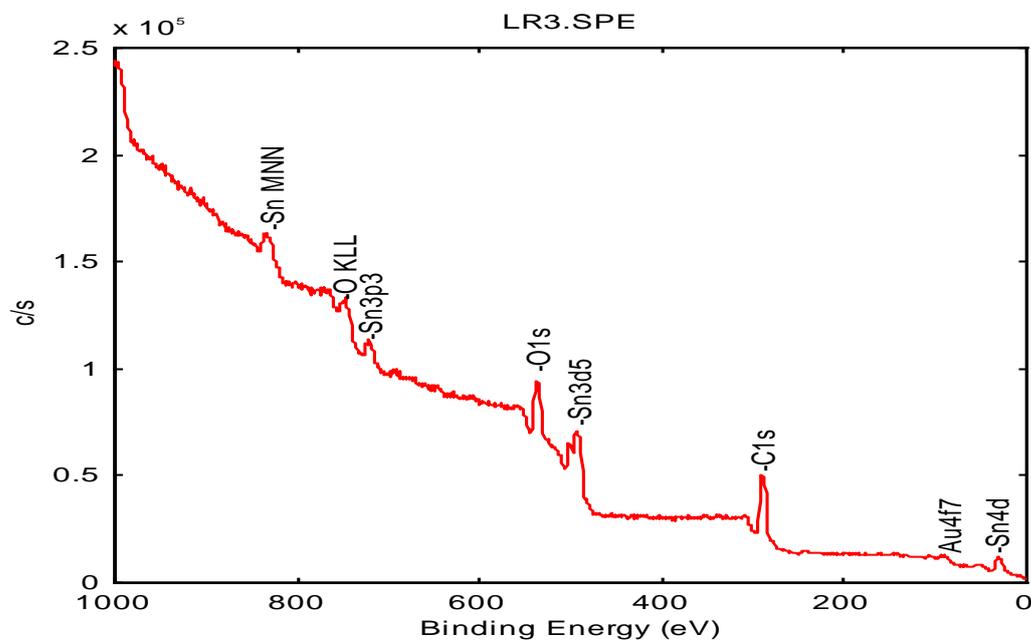


Fig. S4 XPS survey scan of Au-SnO₂ composites.

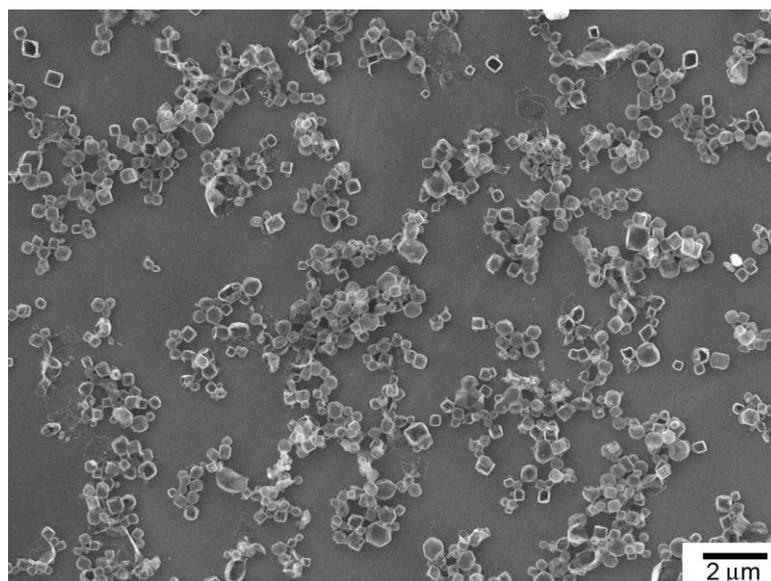


Fig. S5 SEM and TEM images of hollow SnO₂ nanocube.

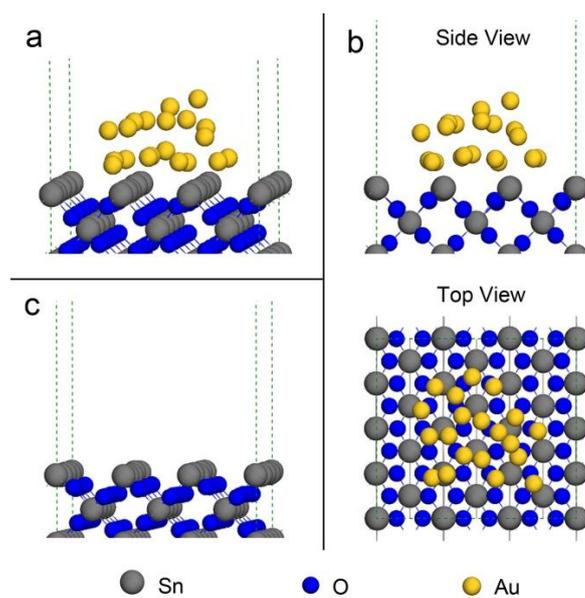


Fig. S6 Structure modes for DFT calculation. SnO₂ (100) crystal facet loaded (a, b) with Au nanoparticle and (c) without Au nanoparticle in a periodical cell. (b) Side and top views of (a).