Electronic Supplementary Information

A general and eco-friendly self-etching route to prepare highly active and stable Au@metal silicate yolk-shell nanoreactors for catalytic reduction of 4-nitrophenol

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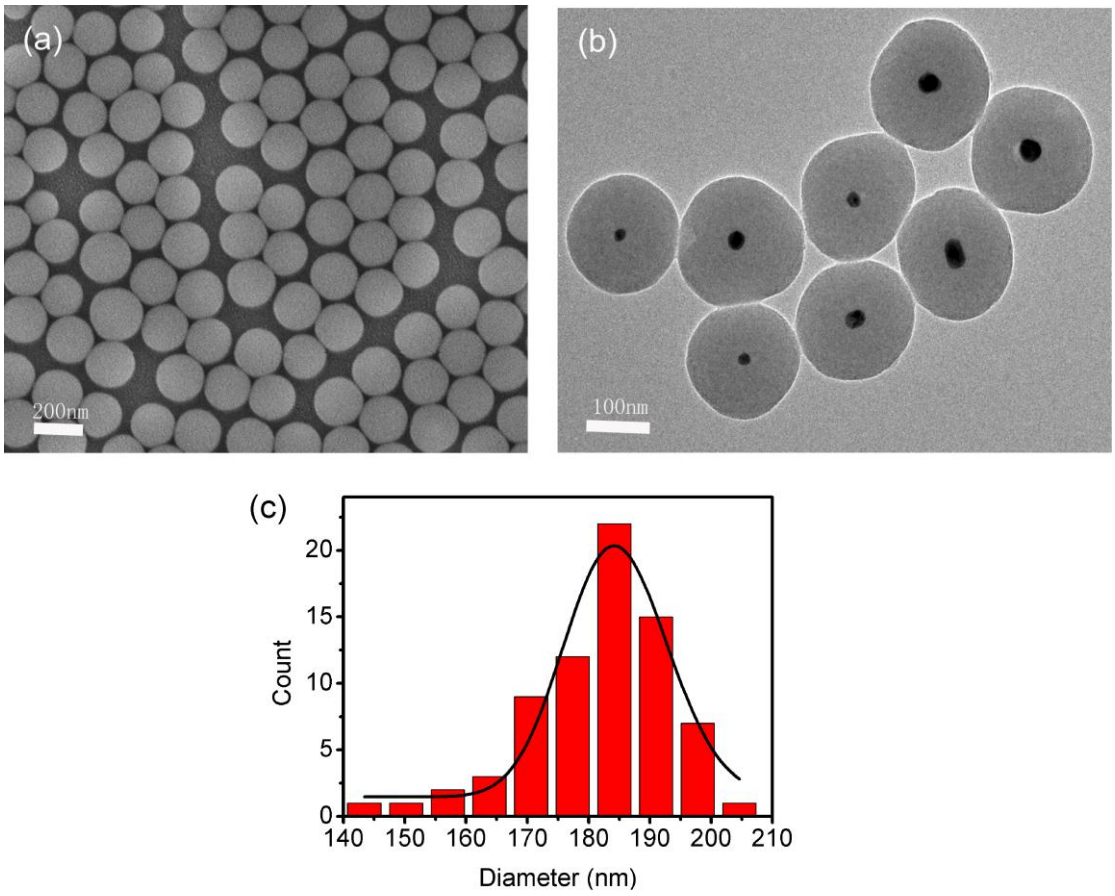

Figure S1 (a) SEM, (b) TEM image, and (c) size distribution analysis of the precursor Au@SiO_2 core-shell particles.

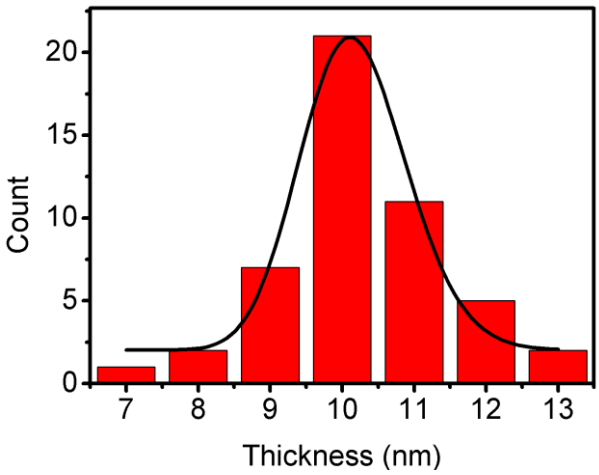

Figure S2 The average thickness of the Au@$MgSiO_3$ nanoshell.

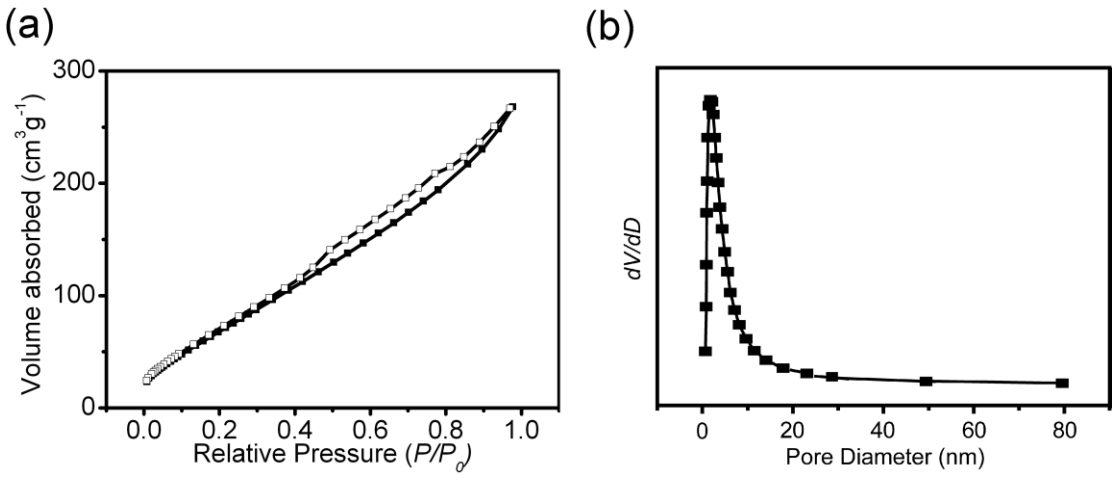

Figure S3 (a) Nitrogen adsorption-desorption isotherm of Au@$MgSiO_3$ and (b) BJH pore-size distribution plot of Au@$MgSiO_3$ obtained from the adsorption data.

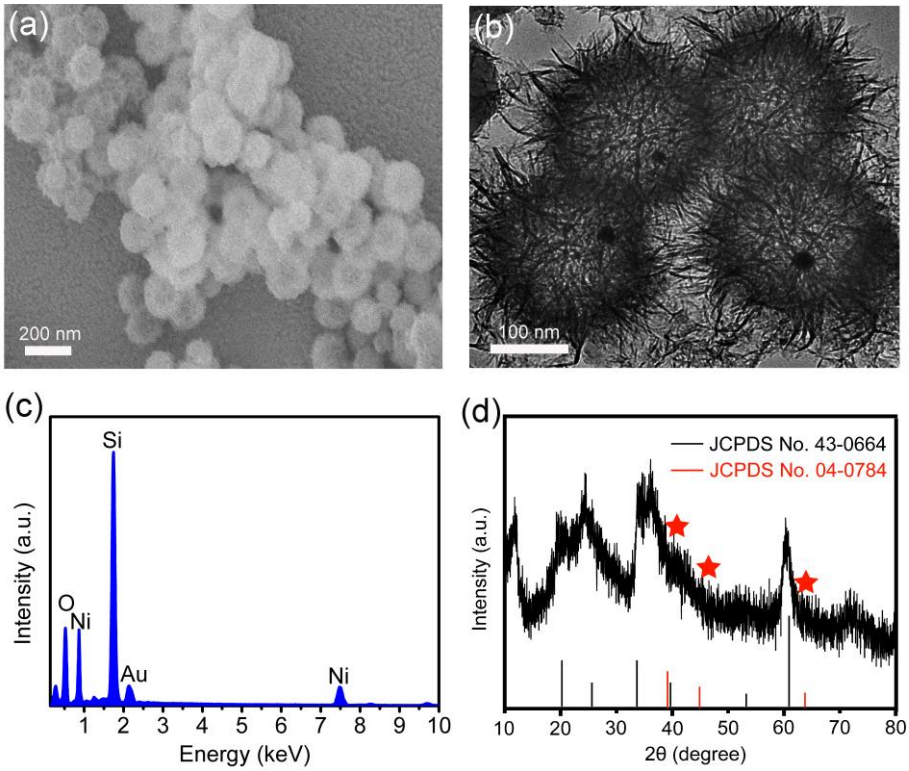

Figure S4 (a) SEM image of the yolk-shell Au@$NiSiO_3$; (b) TEM image of the yolk-shell Au@$NiSiO_3$; (c) EDS and (d) XRD pattern of the yolk-shell Au@$NiSiO_3$ (the star represent the typical diffraction peaks of cubic gold).

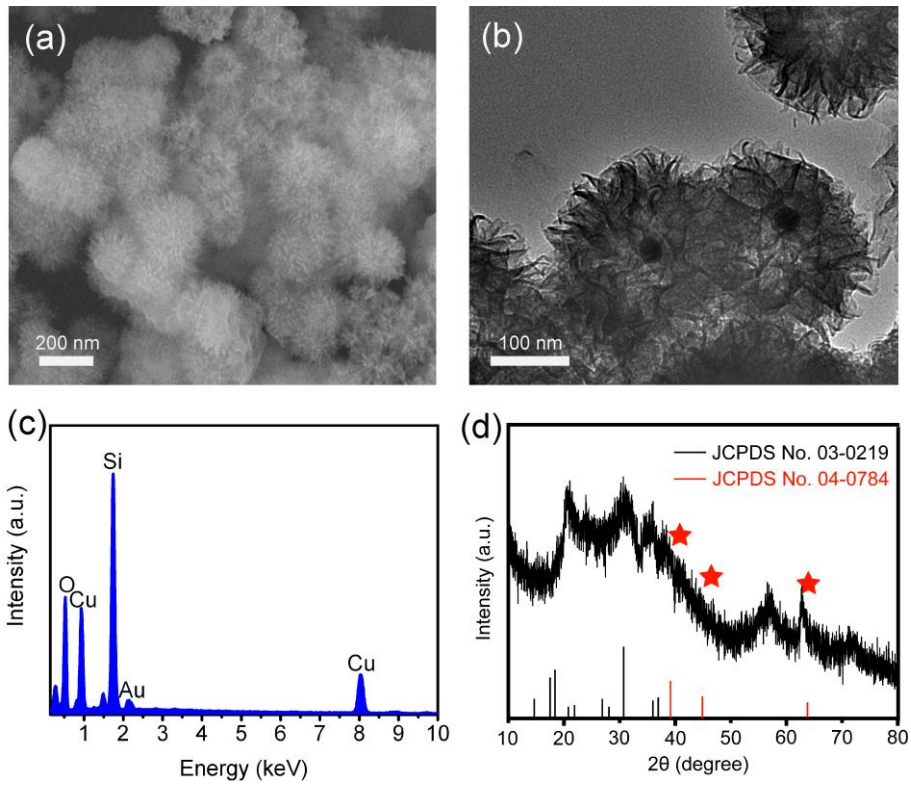

Figure S5 (a) SEM image of the yolk-shell Au@$CuSiO_3$; (b) TEM image of the yolk-shell Au@$CuSiO_3$; (c) EDS and (d) XRD pattern of the yolk-shell Au@$CuSiO_3$ (the star represent the typical diffraction peaks of cubic gold).

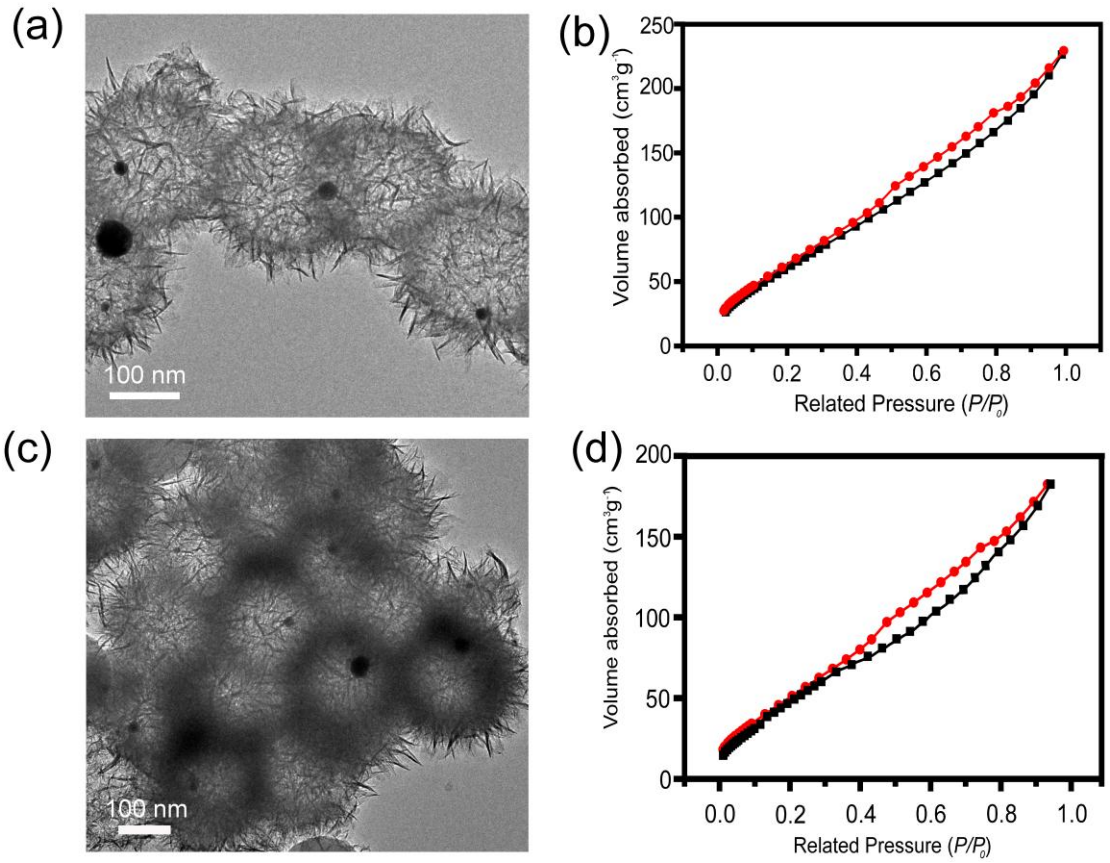

Figure S6 (a) TEM image and (b) nitrogen adsorption-desorption isotherm of the yolk-shell Au@$MgSiO_3$ after calcination at 200 ^oC for 2 h; (c) TEM image and (d) nitrogen adsorption-desorption isotherm of the yolk-shell Au@$MgSiO_3$ after calcination at 500 ^oC for 2 h.