

Electronic Supplementary Information

A Core-shell templated approach to the nanocomposites of silver sulfide and noble metal nanoparticles with hollow/cage-bell structures

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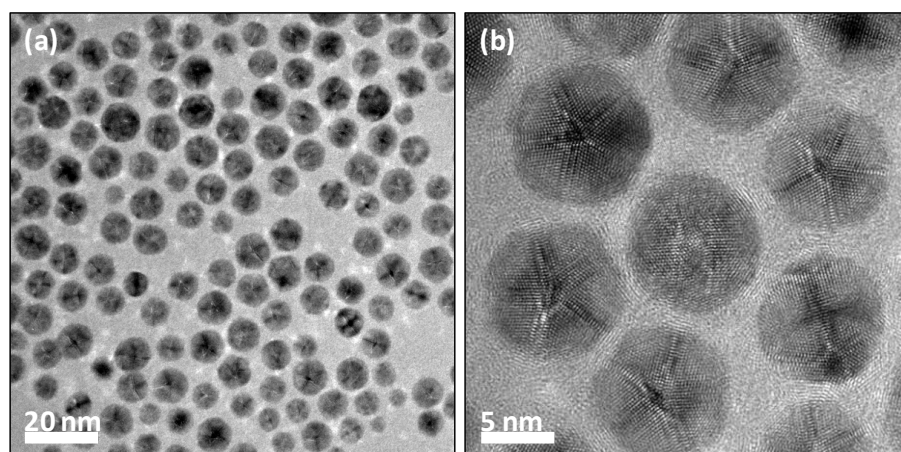


Fig. S1 TEM image (a) and HRTEM image (b) of Ag seed nanoparticles synthesized by oleylamine reduction of AgNO₃.

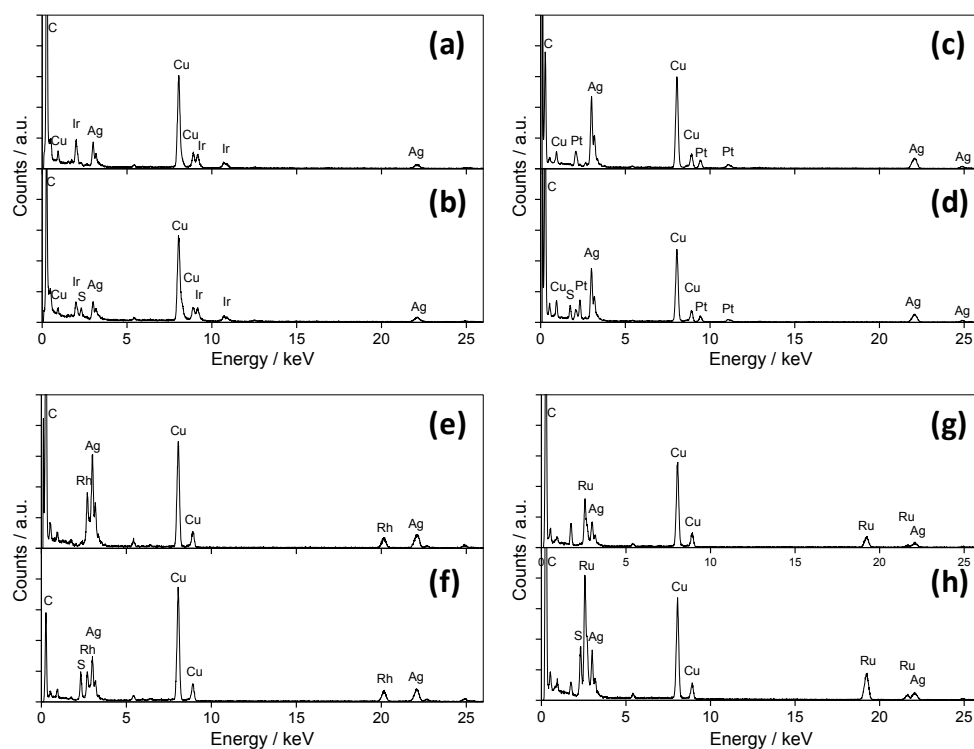


Fig. S2 EDX analyses of core-shell Ag-Ir (a,b), Ag-Pt (c,d), Ag-Rh (e,f), and Ag-Ru (g,h) nanoparticles before (a,c,e,g) and after sulfur treatment (b,d,f,h).

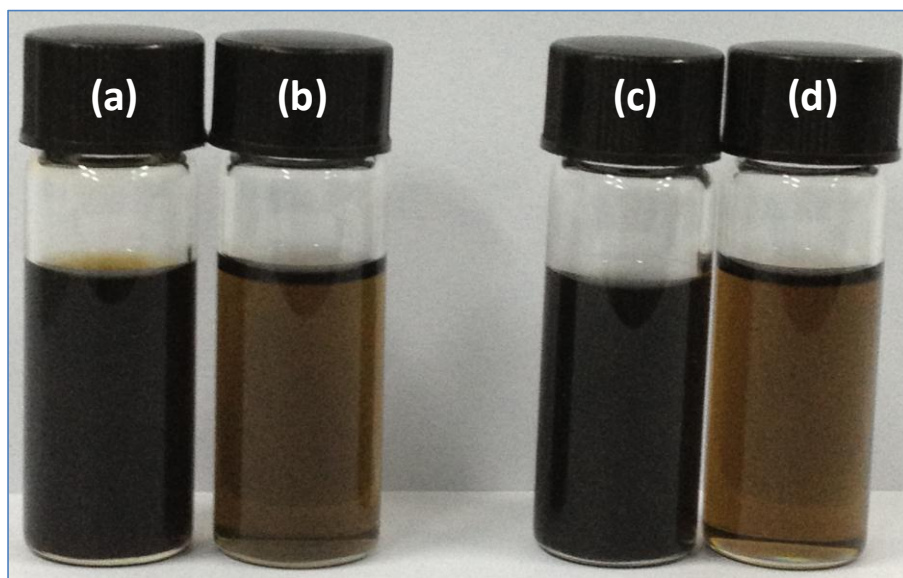


Fig. S3 Digital photos of core-shell Ag-Ir (a,b) and Ag-Pt (c,d) nanoparticle solutions before (a,c) and after (b,d) treatment with element sulfur.

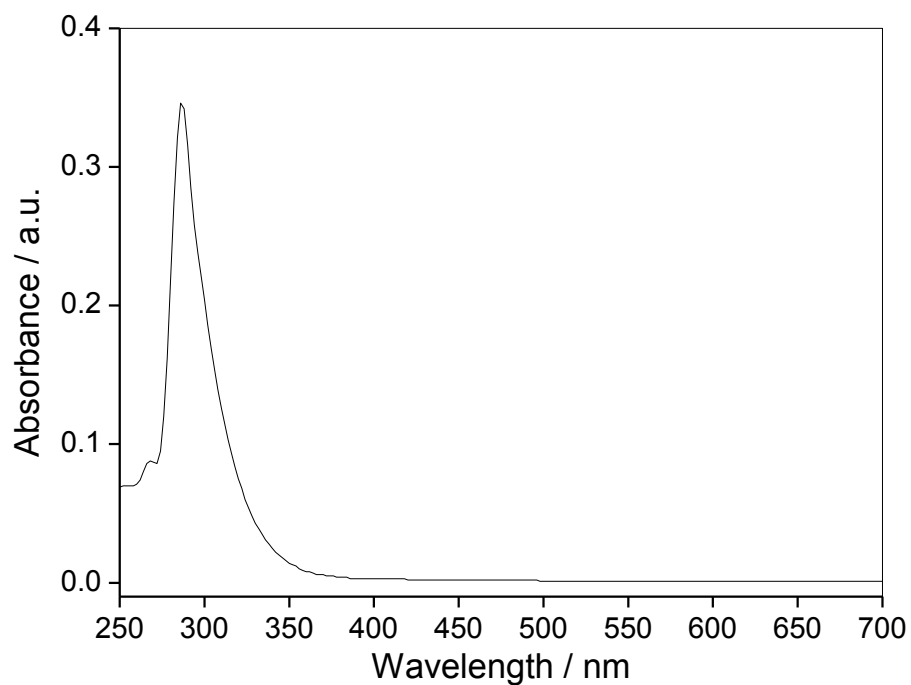


Fig. S4 The UV-visible spectrum of the physical mixture containing toluene and oleylamine.

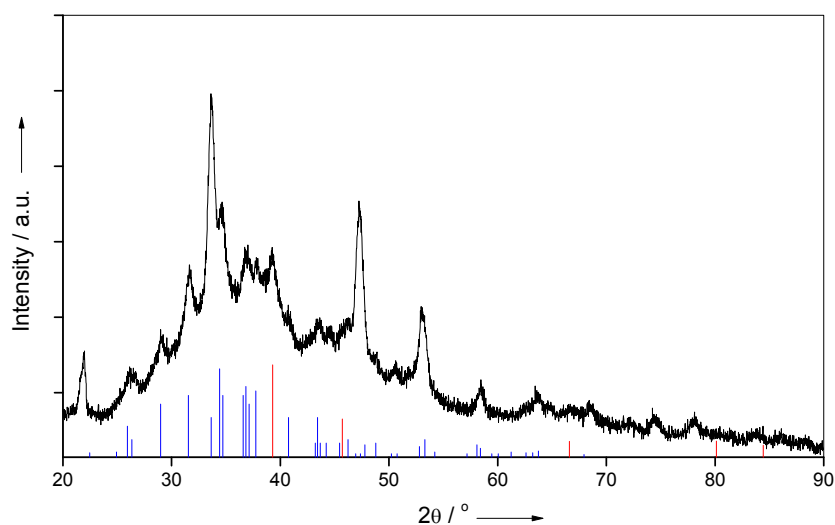


Fig. S5 XRD pattern of the as-prepared Ag_2S -hollow Pt nanocomposites, in which the references for monoclinic Ag_2S (JCPDS Card File 140072, blue column) and face-centered cubic Pt (JCPDS Card File 882343, red column) were also displayed.

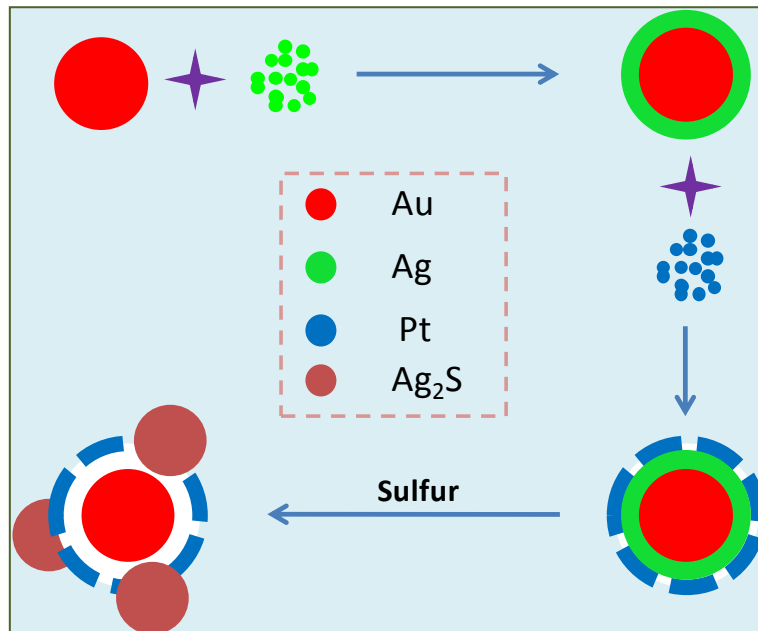


Fig. S6 Schematic for the synthesis of Ag_2S -cage-bell Au-Pt nanocomposites based on the inside-out diffusion of Ag in core-shell-shell nanoparticles.

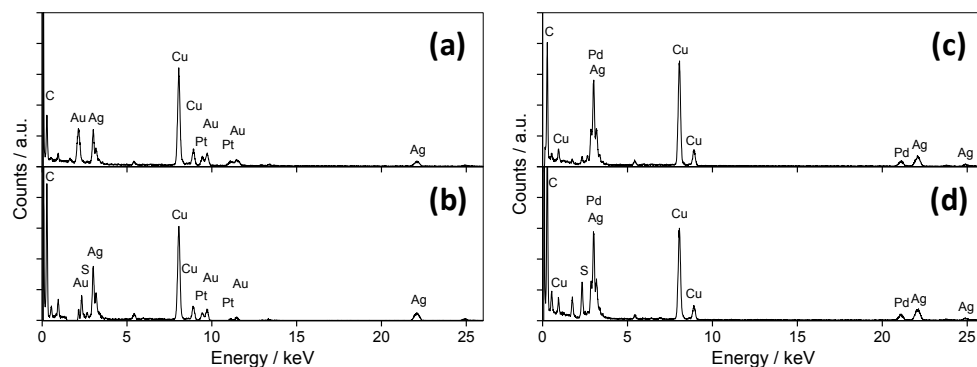


Fig. S7 EDX analyses of core-shell-shell Au-Ag-Pt (a,b) and alloy Ag/Pd (c,d) before (a,c) and after sulfur treatment (b,d).

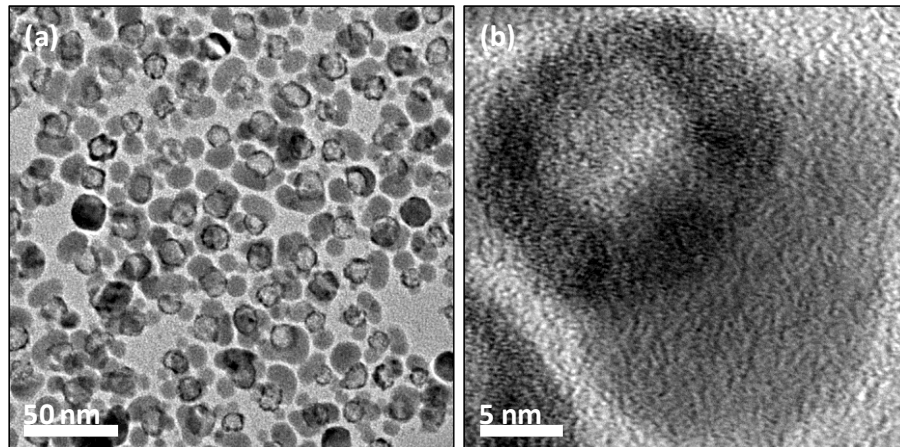


Fig. S8 TEM image (a) and HRTEM image (b) of Ag₂S-hollow Pt nanocomposites synthesized by Na₂S treatment of core-shell Ag-Pt nanoparticles.