

Supplementary Information

Elaborate control over the morphology and structure of mercapto-functionalized mesoporous silicas as multipurpose carriers

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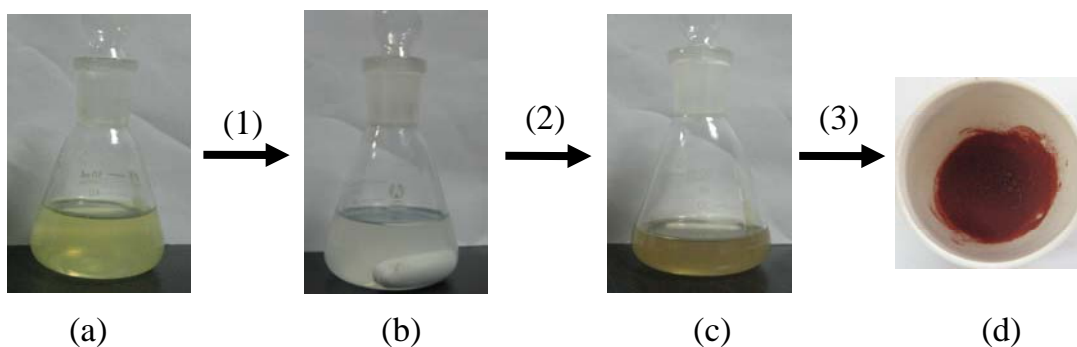


Fig. S1. Colors of the reaction mixture at different stages. (a) the initial mixture of silica nanorods and aqueous HAuCl_4 presented yellow color; (b) the mixture turned colorless after stirring at room temperature for 3 h (1); (c) the mixture became pale red after addition of a given volume of aqueous NaBH_4 (2); (d) a dark red product was obtained after calcination at $550\text{ }^\circ\text{C}$ for 3 h (3).

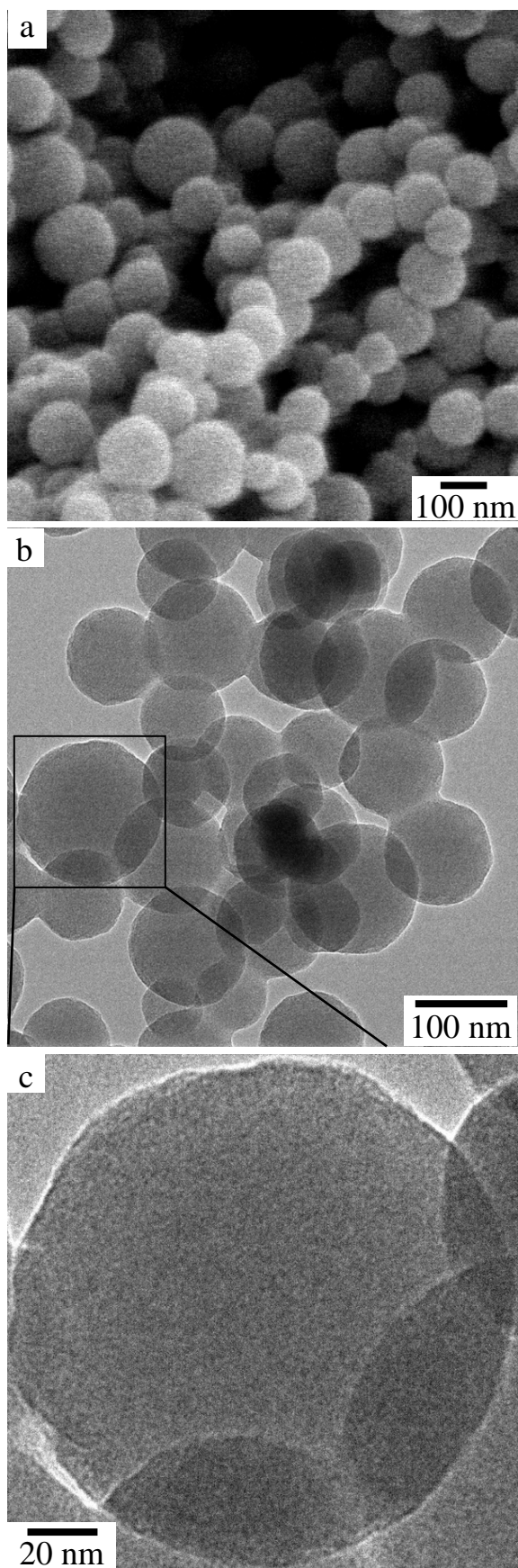


Fig. S2. SEM (a) and TEM (b,c) images of extracted S7-0.30.

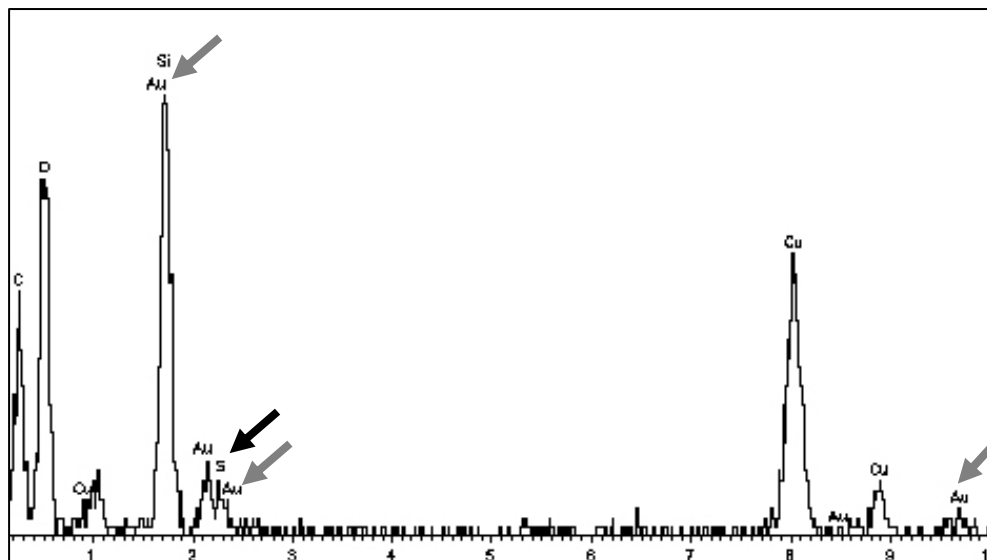


Fig. S3. EDX spectrum of uncalcined Au@SiO₂ (extracted S4-0.10 as carrier). The presence of S (black arrow) and Au (gray arrows) elements is clearly shown, suggesting successful functionalization by mercapto (HS-) groups and loading of Au nanoparticles in the mesopores of silica nanorods, respectively. The presence of C and Cu elements is attributed to carbon-coated copper grid.

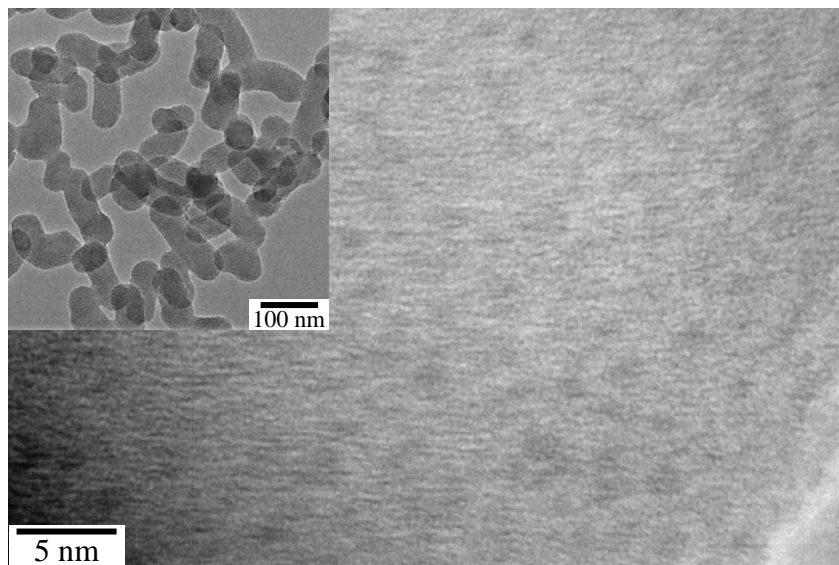


Fig. S4. TEM images of uncalcined Au@SiO₂ nanorods (extracted S3-0.08 as carrier).

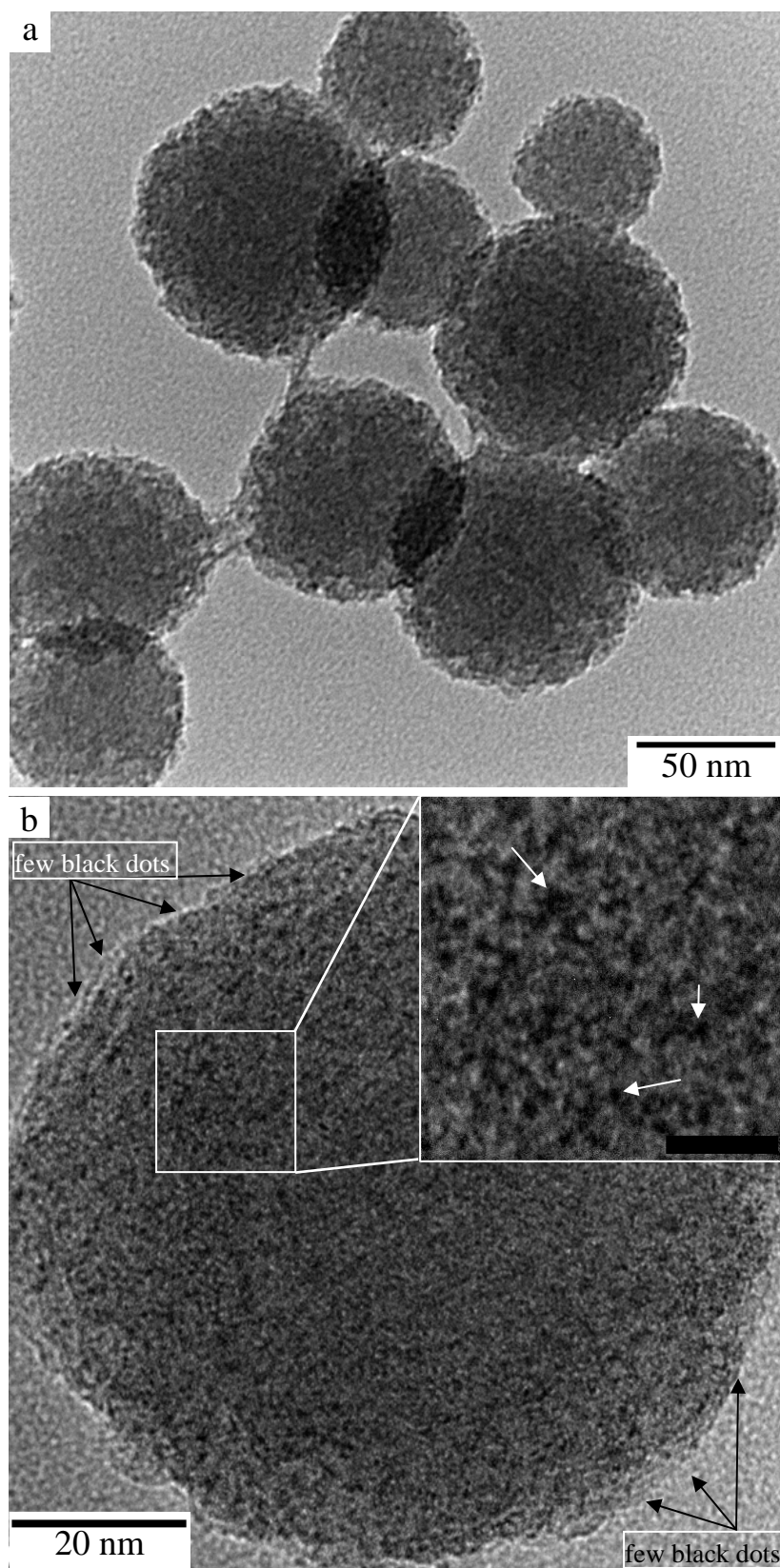


Fig. S5. TEM images of uncalcined Au@SiO₂ nanospheres (S3-0.10-10 silica nanospheres as carrier). The scale bar in (b) is 5 nm.

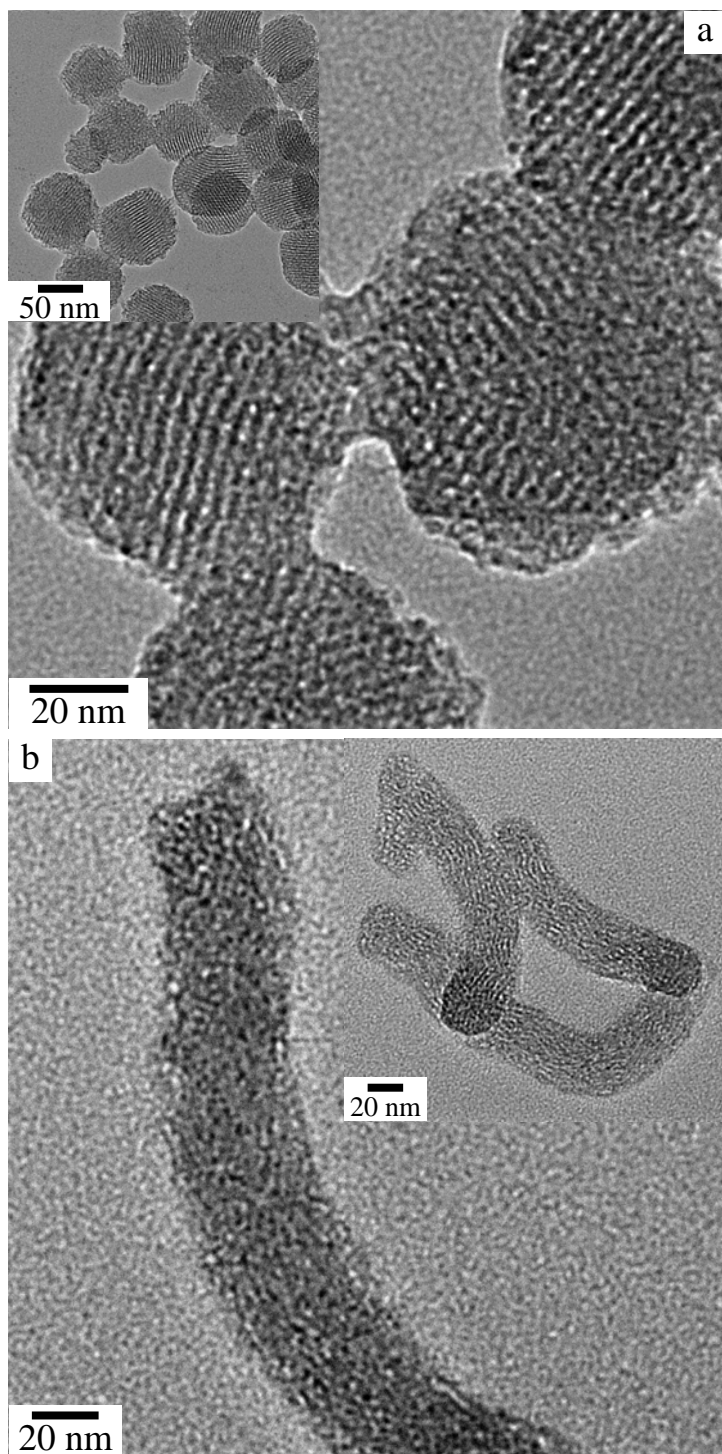


Fig. S6. TEM images of uncalcined Au@SiO₂ nanospheres (calcined S1-0.00 silica nanospheres as carrier) and Au@SiO₂ nanorods (calcined S4-0.10 silica nanorods as carrier).