

Electronic Supporting Information

Facile synthesis of highly ordered mesoporous silver using cubic mesoporous silica template with controlled surface hydrophobicity

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Table S1 Physicochemical properties of mesoporous materials in the present work

Materials ^a	Organic content (wt%) ^b	S_{BET} ($\text{m}^2 \text{g}^{-1}$) ^c	V_{tot} ($\text{cm}^3 \text{g}^{-1}$) ^d	V_{micro} ($\text{cm}^3 \text{g}^{-1}$) ^e	D_{p} (nm) ^f
KIT-6	-	789	1.05	0.16	7.7
PHP-KIT-6	1.2	745	1.00	0.14	7.6
HP-KIT-6	2.7	641	0.89	0.10	7.4
Mesoporous Ag	-	27	0.07	-	12.5

^a PHP-KIT-6 and HP-KIT-6 denote partially hydrophobic KIT-6 and hydrophobic KIT-6, respectively. ^b Organic contents obtained by TGA analysis (weight loss between 200 °C and 600 °C). ^c BET surface areas calculated from the N₂ adsorption branches in the range of relative pressure (p/p_0) = 0.05 – 0.20. ^d Total pore volumes measured at p/p_0 = 0.99. ^e Micropore volumes (less than 2 nm of pore diameter) calculated at p/p_0 = 0.16 using Horvath-Kawazoe formula. ^f Pore diameters obtained from N₂ adsorption branches by BJH method.

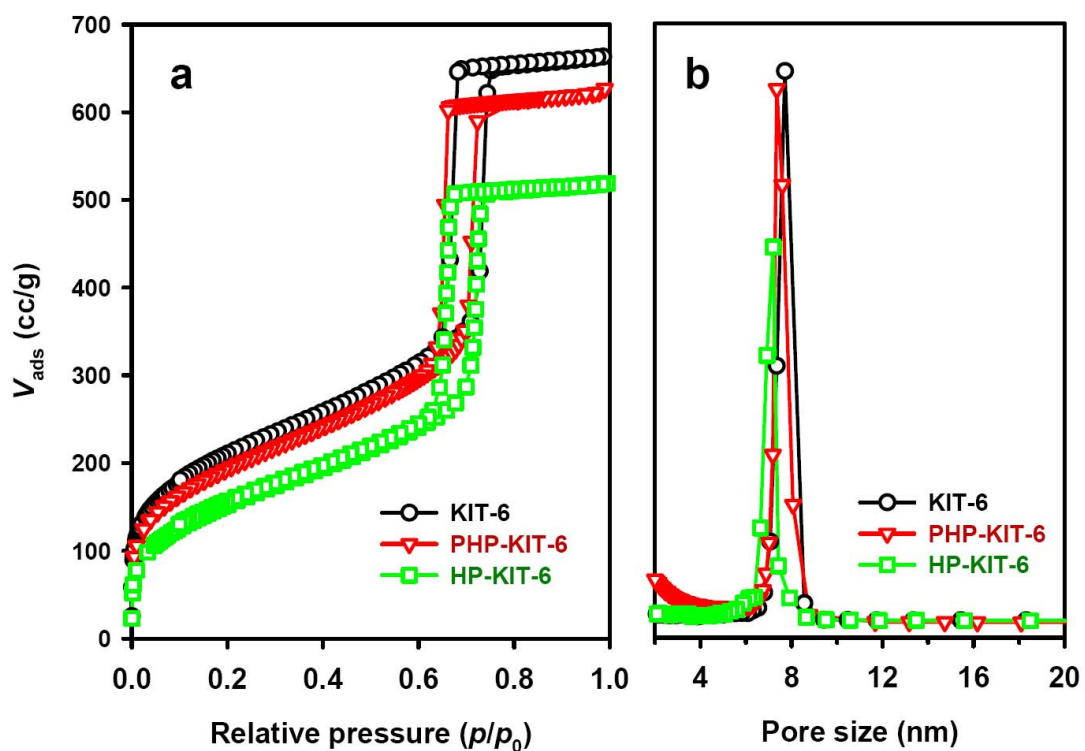


Fig. S1 (a) N_2 adsorption-desorption isotherms and (b) corresponding BJH pore size distribution curves for the mesoporous silica templates.

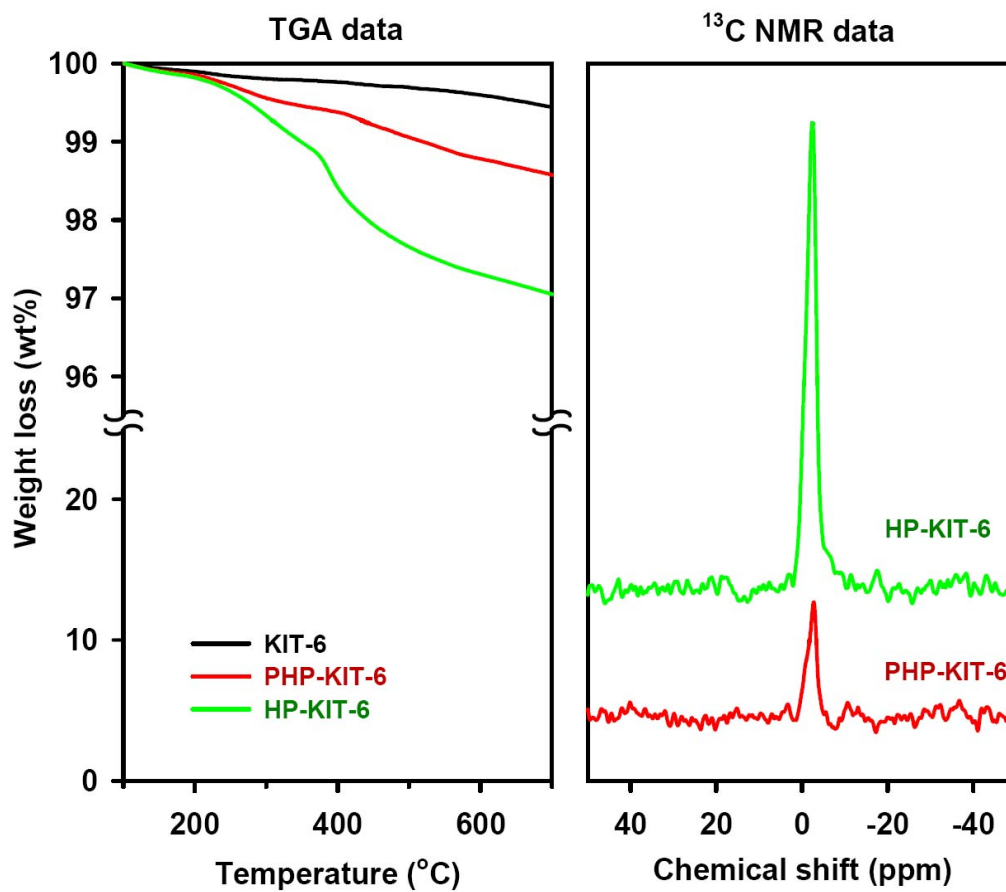


Fig. S2 TGA data and ¹³C solid state NMR spectra for the mesoporous materials.

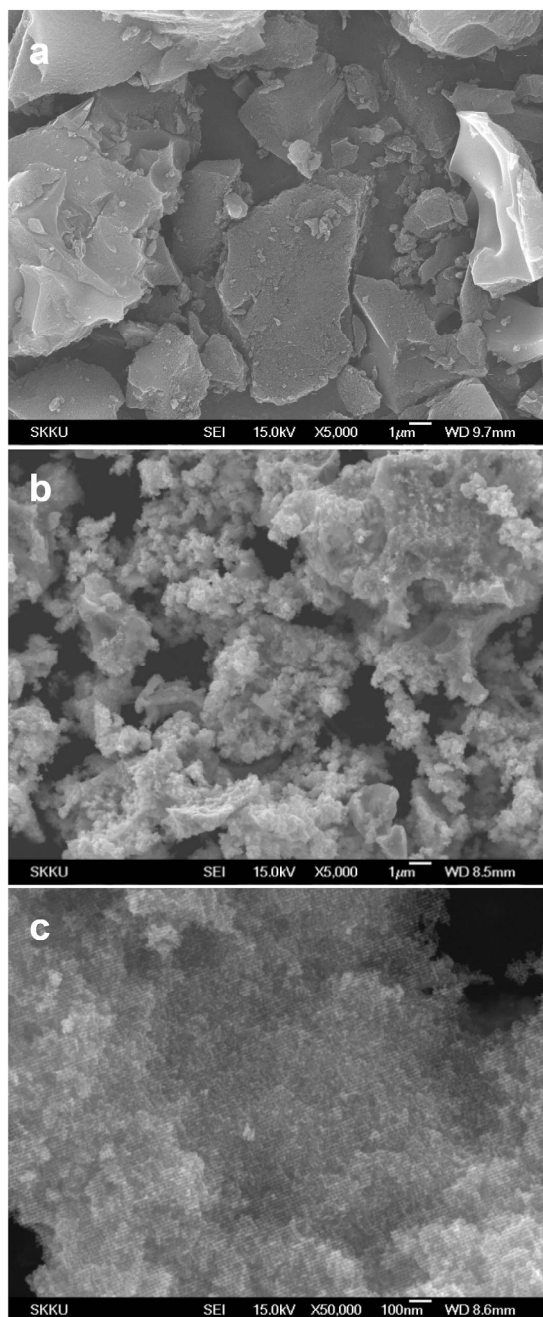


Fig. S3 SEM images for (a) KIT-6 and (b,c) mesoporous silver material.

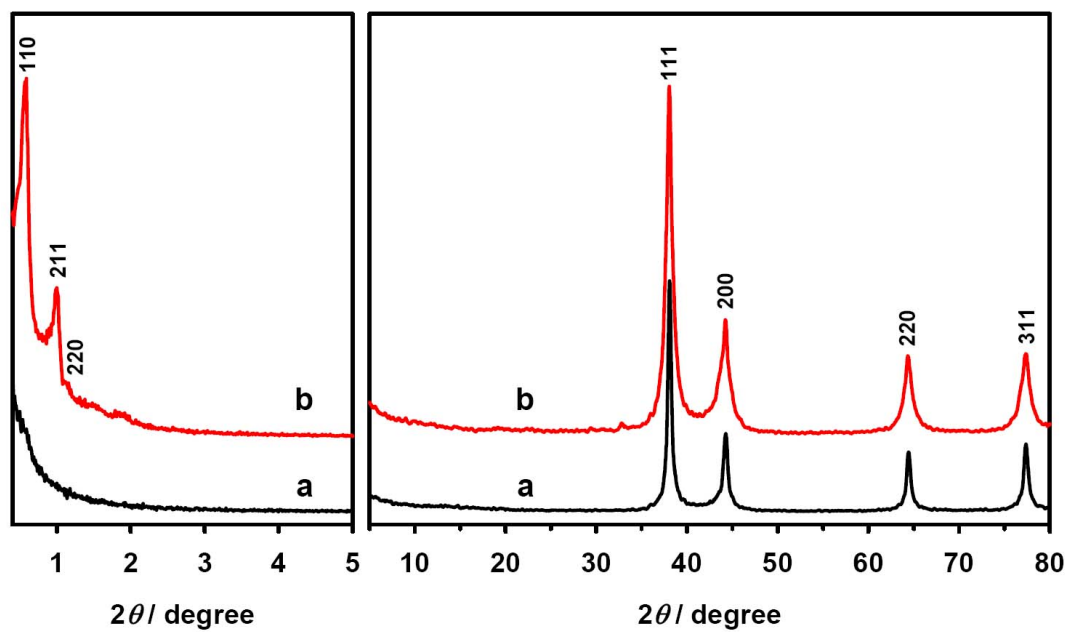


Fig. S4 XRD patterns of silver materials obtained from (a) KIT-6 and (b) HP-KIT-6 templates.

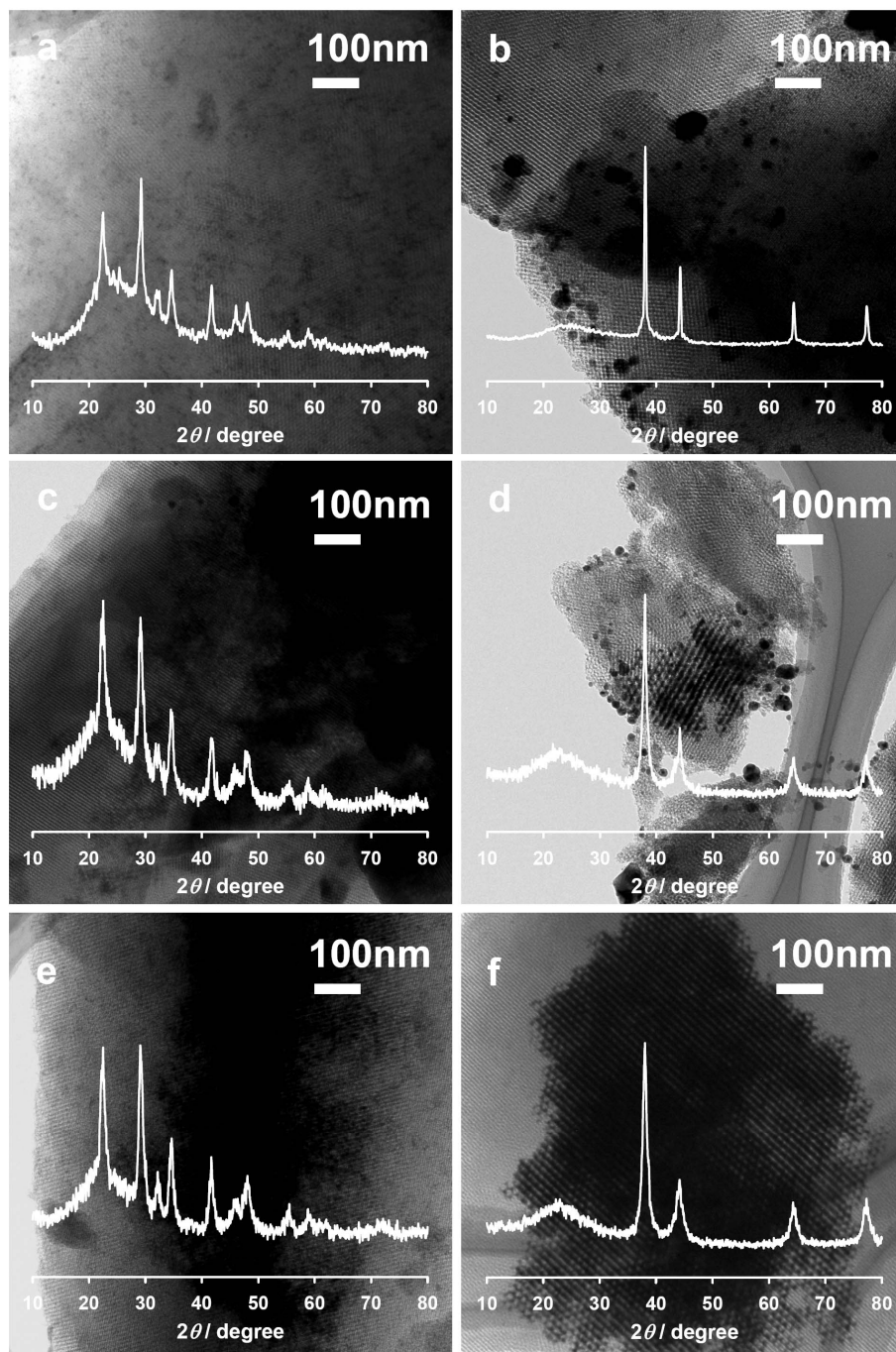


Fig. S5 TEM images and XRD patterns obtained after the impregnation of AgNO_3 and drying the samples at 353 K: (a) KIT-6, (c) PHP-KIT-6 and (e) HP-KIT-6, and after the reduction process: (b) KIT-6, (d) PHP-KIT-6 and (f) HP-KIT-6.

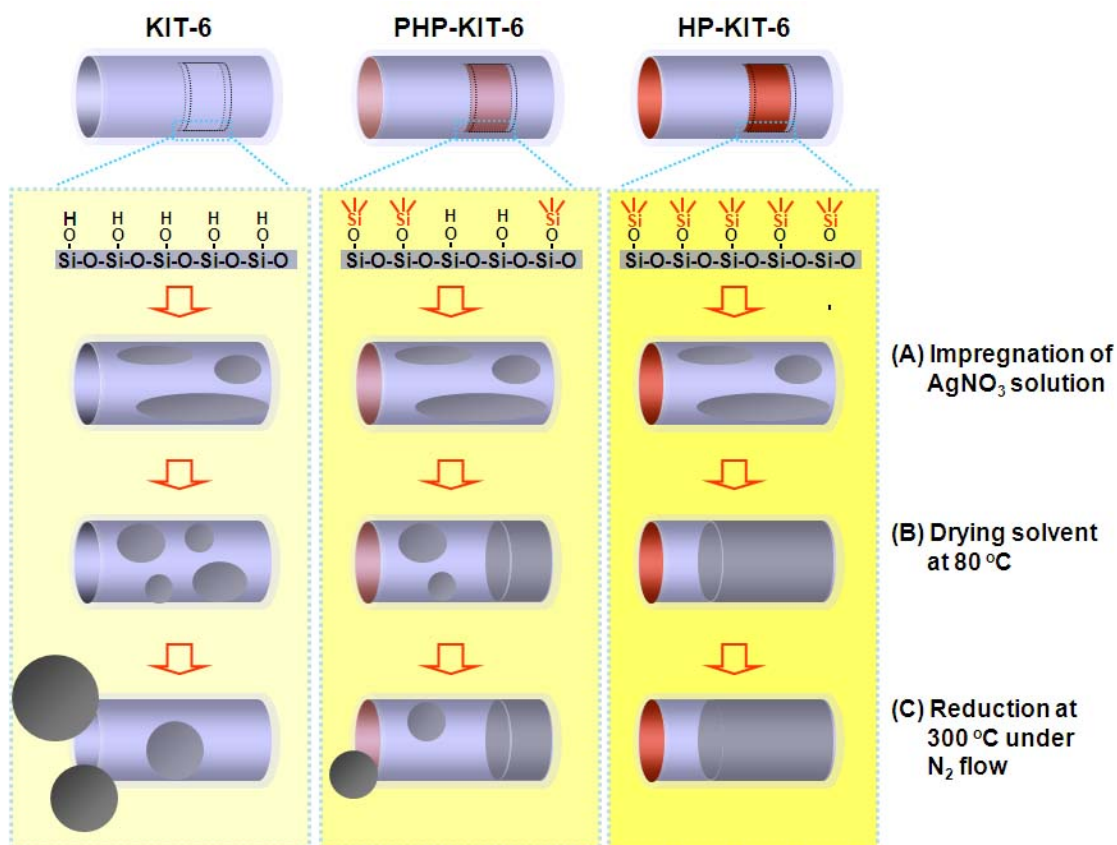


Fig. S6 Schematic diagram for the formation mechanism of silver materials depending on surface hydrophobicity in the present work.