

## Electronic Supplementary Information

# Preparation of highly controlled nanostructured Au within mesopores using reductive deposition in non-polar environments

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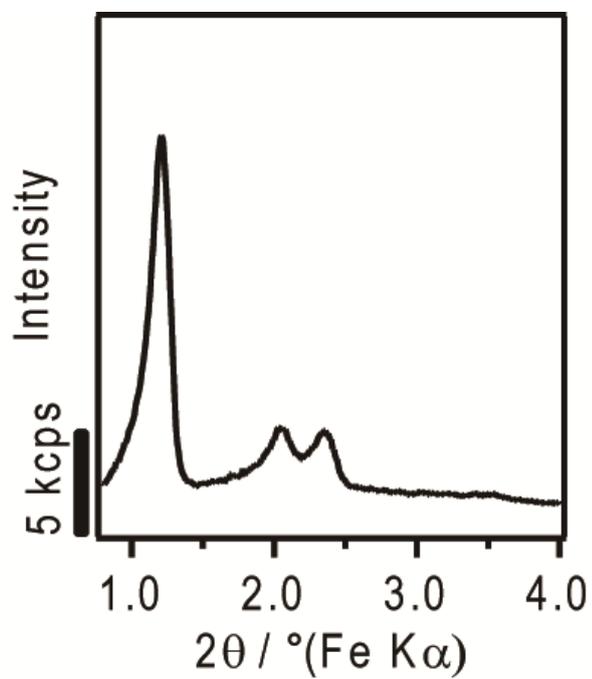


Figure S1 Low-angle XRD pattern of SBA-15.

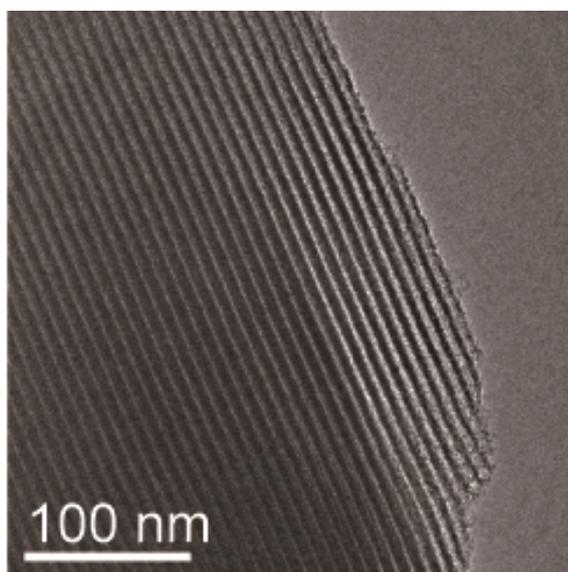
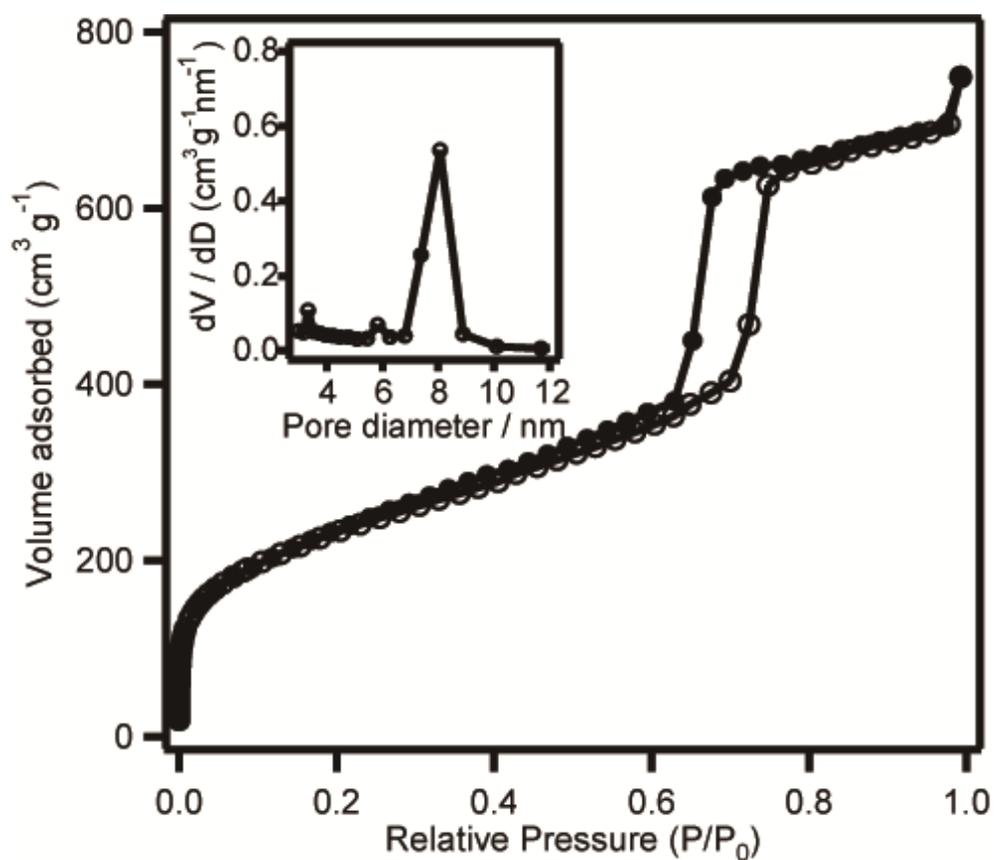
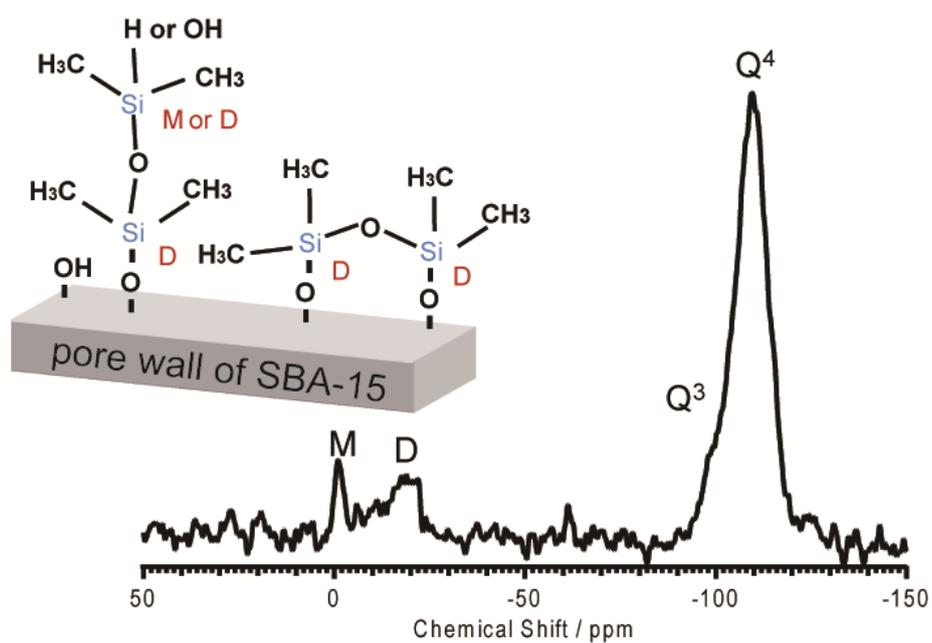


Figure S2 TEM image of SBA-15.



**Figure S3**  $\text{N}_2$  adsorption desorption isotherm of SBA-15 (inset: BJH pore size distribution).



**Figure S4**  $^{29}\text{Si}$  MAS NMR spectrum of SBA-15/Au.

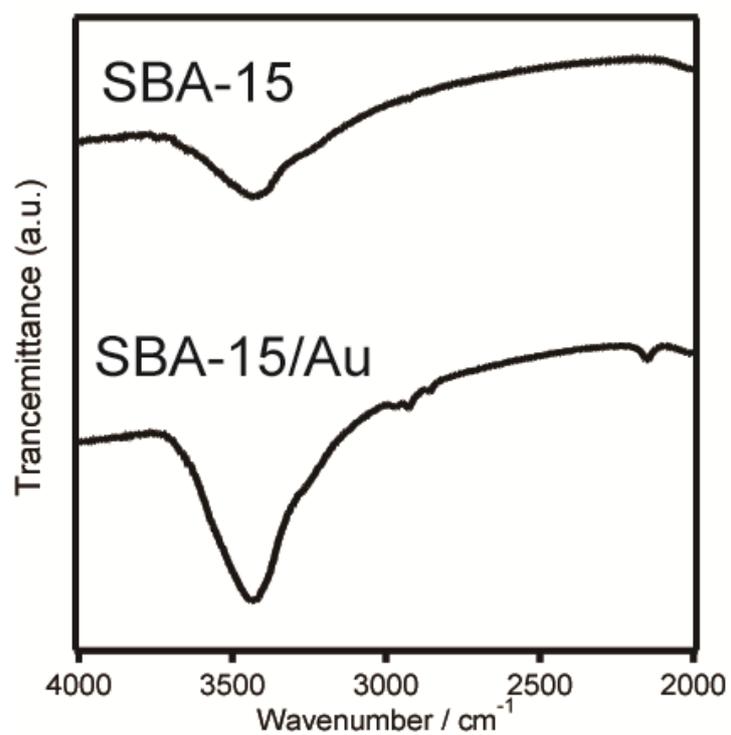


Figure S5 FT-IR spectra of SBA-15 and SBA-15/Au.

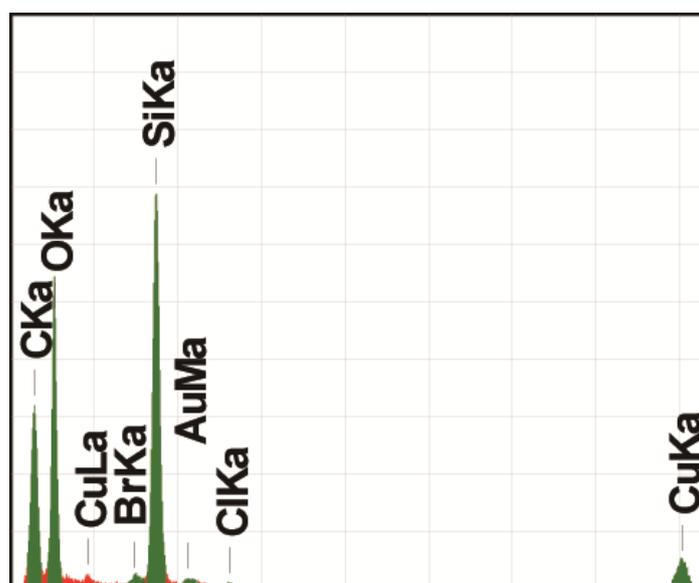
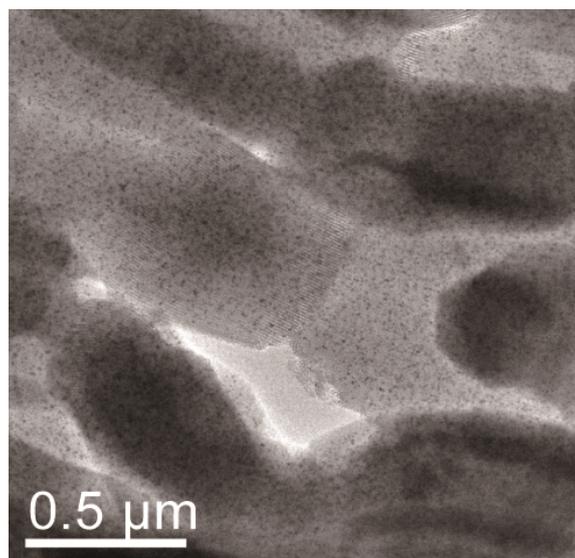
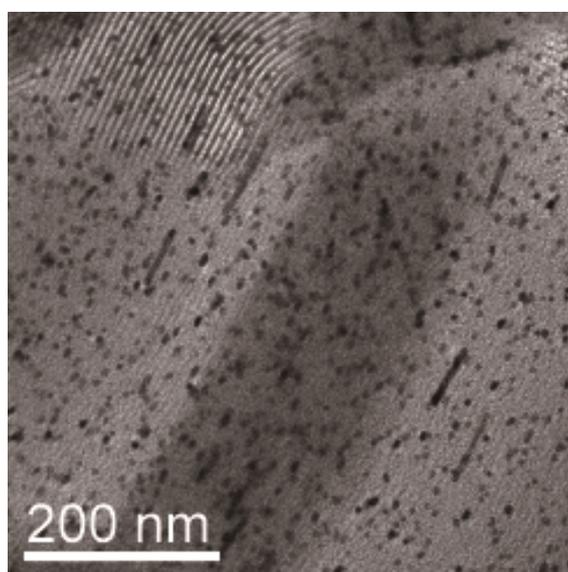


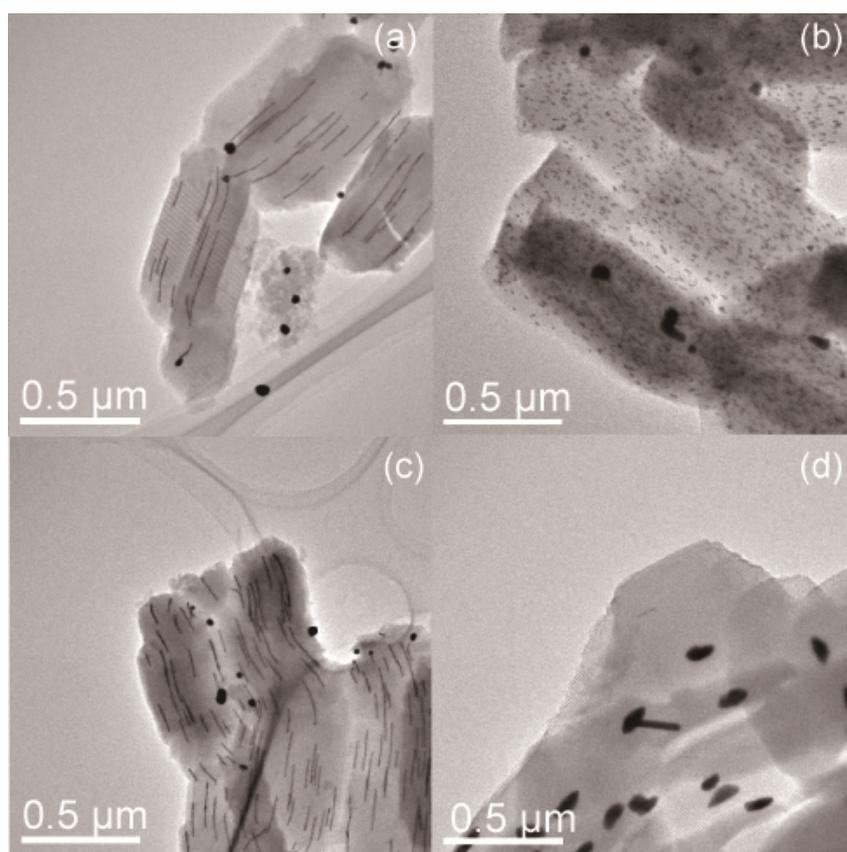
Figure S6 EDX spectrum of SBA-15\_CTAB prepared without washing with hexane and ethanol.



**Figure S7** Low-magnified TEM image of SBA-15/Au\_CTAB.



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**Figure S9** TEM images of SBA-15/Au prepared by using (a) triethylsilane, (b) tributylsilane, (c) trihexylsilane, and (d) triphenylsilane as reducing agents, respectively.