Electronic Supplementary Information

Synthesis and characterization of a novel Au nanocatalyst with increased thermal stability

Yiwei Zhang, Yuming Zhou*, Zewu Zhang, Sanming Xiang, Xiaoli Sheng, Shijian Zhou, Fei Wang

School of Chemistry and Chemical Engineering, Southeast University, Nanjing 211189, P.R.China.

E-mail: ymzhou@seu.edu.cn; Tel: +86 25 52090617; Fax: +86 25 52090617.

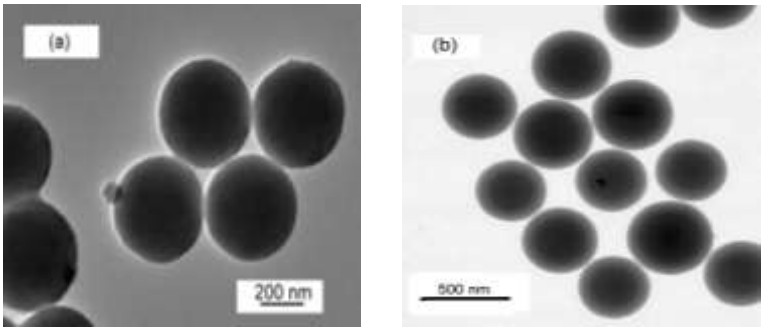

Fig. S-1 TEM images of TiO_2/SiO_2 spheres with different thickness prepared by multiple sol-gel coating processes: (a) twice and (b) third times.

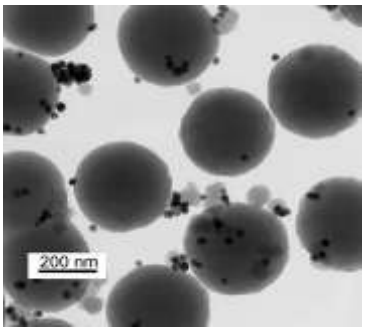

Fig.S-2 TEM images after the deposition of Au on the surface of TiO_2/SiO_2 spheres without the modification of APTES.

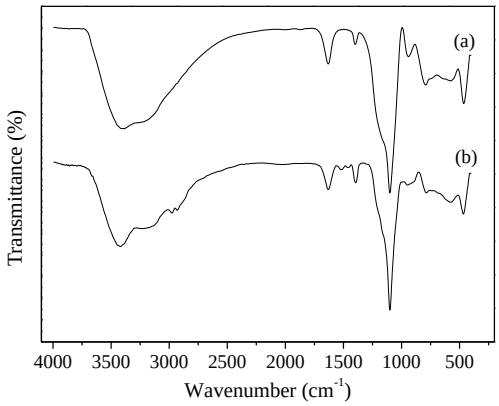

Fig.S-3 FTIR spectra of: (a) as-prepared TiO_2/SiO_2 nanoparticles, (b) TiO_2/SiO_2 nanoparticles functionalized with $–NHNH_2$ group.

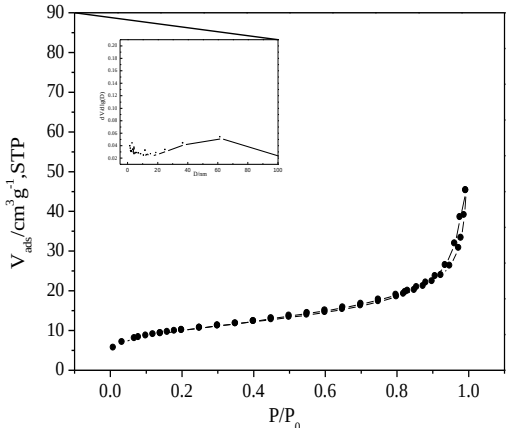

Fig.S-4 N_2 adsorption / desorption isotherms of the $SiO_2/Au/TiO_2/SiO_2$ samples after the etching treatment for 90 min. Insert shows the corresponding pore size distribution.