

Supporting information

Surface-Bound Sacrificial Electron Donors in Promoting Photocatalytic Reduction on Titania Nanocrystals

Ji Feng,^a Fan Yang,^a Yifan Ye,^b Wenshou Wang,^c Xiaxi Yao,^d Qingsong Fan,^a Luntao Liu,^c Rashed M. Aleisa,^a Jinghua Guo^b and Yadong Yin^{a*}

^a. Department of Chemistry, University of California, Riverside, CA 92521, USA. E-mail: yadong.yin@ucr.edu

^b. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA

^c. National Engineering Research Center for Colloidal Materials, School of Chemistry and Chemical Engineering, Shandong University Ji'Nan 250100, P.R. China

^d. School of Chemistry and Materials Engineering, Changshu Institute of Technology, Changshu 215500, P. R. China

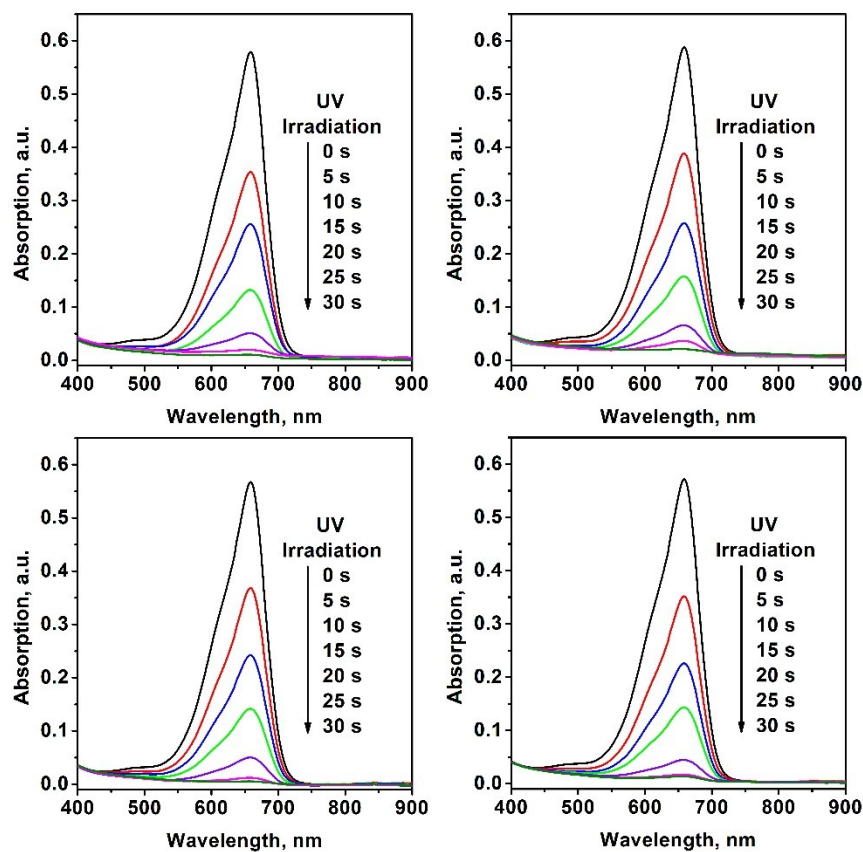


Figure S1 UV-vis spectra of repeated photocatalytic reduction of MB on titania nanocrystals upon 365 nm UV irradiation.

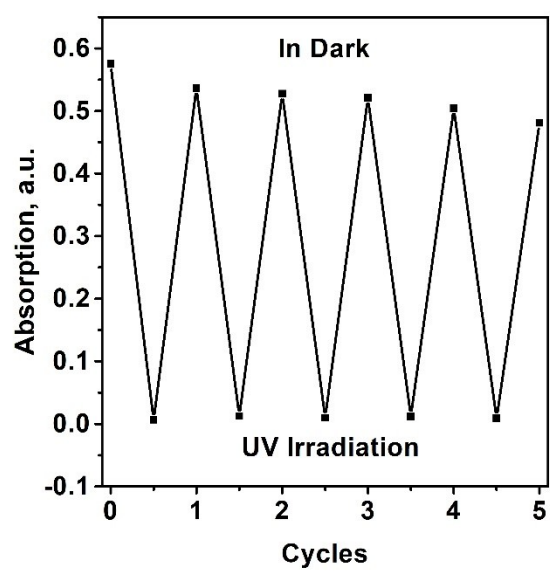


Figure S2 Cycling performance of titania nanocrystals towards the photocatalytic reduction of MB.

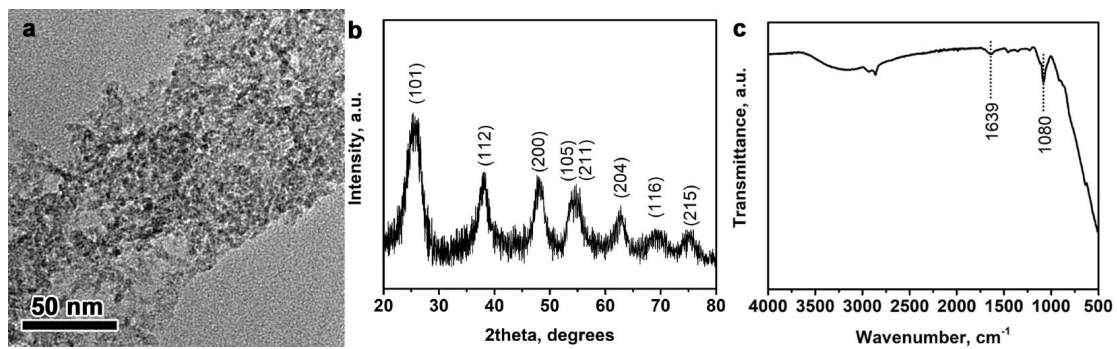


Figure S3 TEM image, XRD pattern, and FTIR spectrum of titania nanocrystals after one run of the photocatalysis.

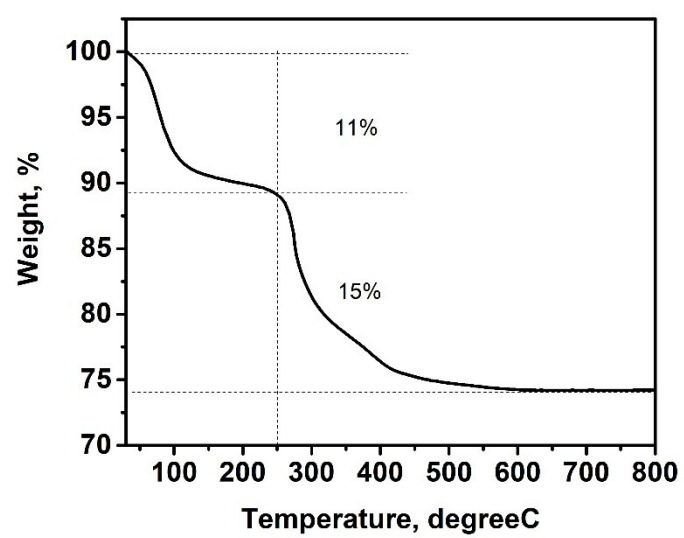


Figure S4 TGA analysis of the titania nanocrystals.

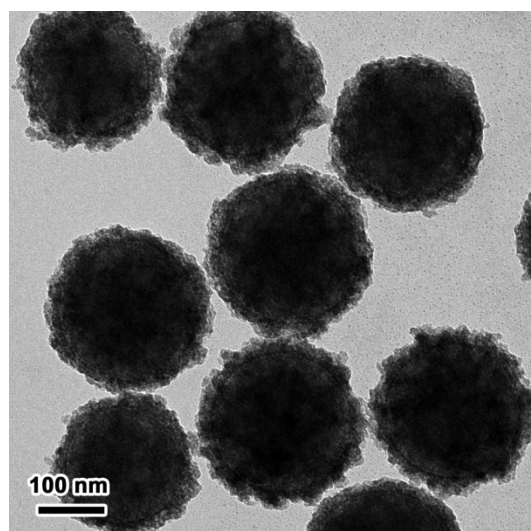


Figure S5 TEM images of ST-700 core-shell nanoparticles.

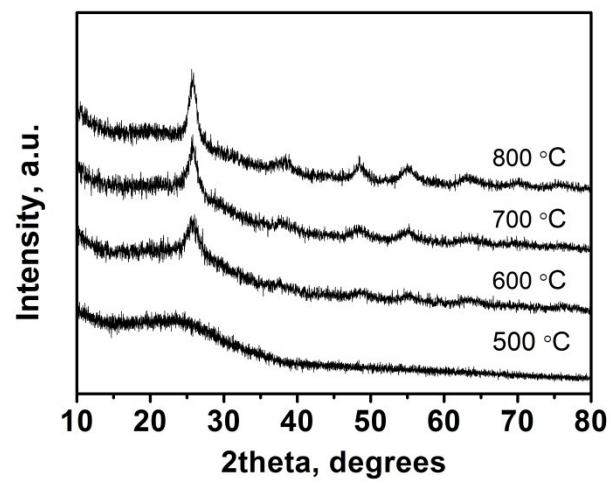


Figure S6 XRD patterns of $\text{SiO}_2@\text{TiO}_2$ calcined at 500, 600, 700 and 800 °C.

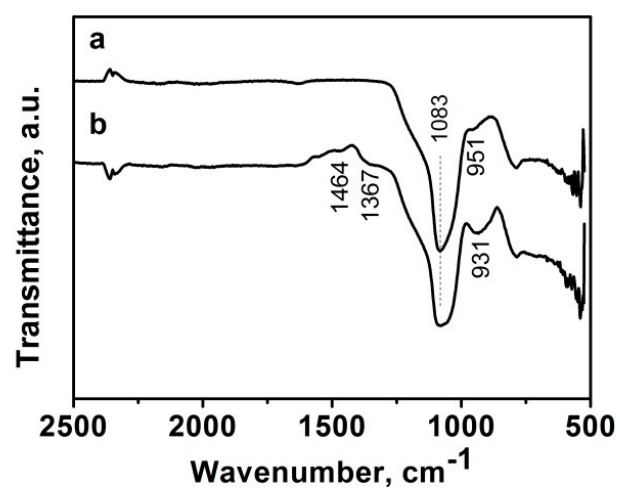


Figure S7 FTIR spectra of ST-700 core-shell nanoparticles (a) before and (b) after DEG modification.

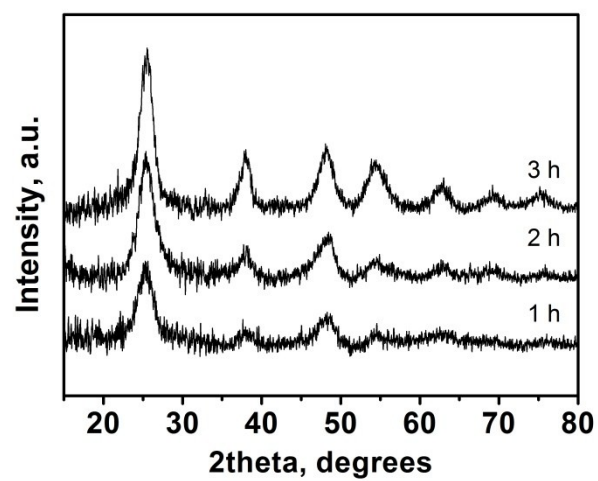


Figure S8 XRD patterns of titania nanocrystals synthesized at 220 °C for 1, 2 and 3 hrs in DEG.