

## Support Information

### Topochemical synthesis and Photocatalytic Activity of 3D Hierarchical BaTiO<sub>3</sub>

#### Microspheres Constructed from Crystal-Axis-Oriented Nanosheets

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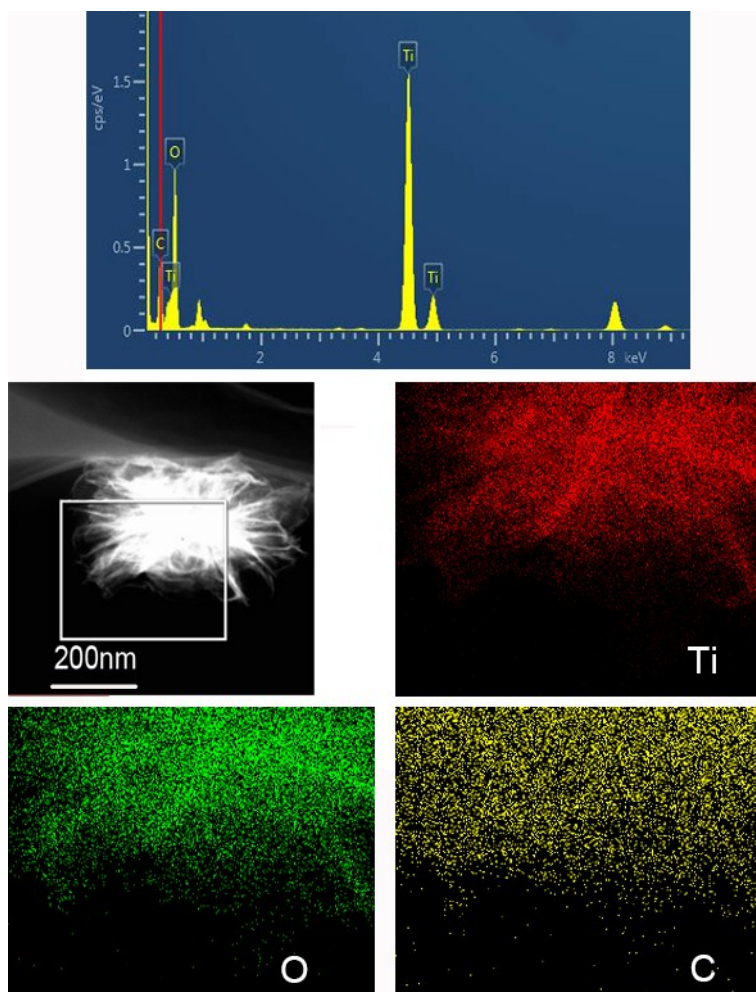


Fig.S1) the HTO hierarchical microspheres by EDX analysis

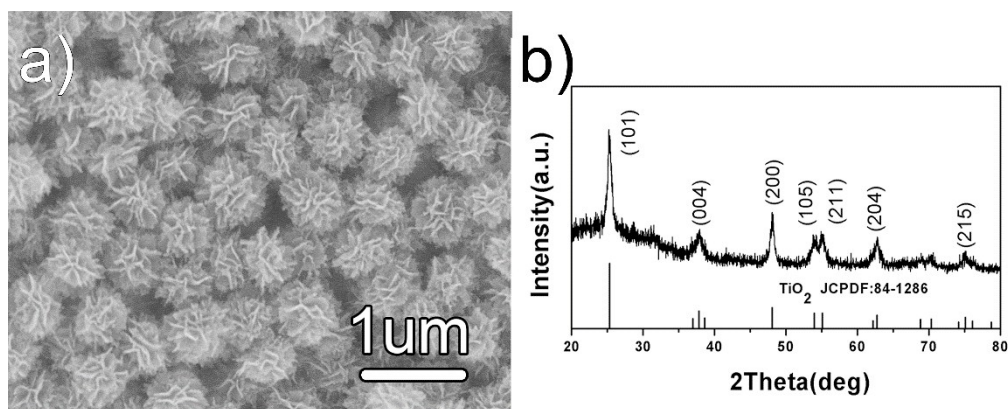


Fig.S2 a ) TEM image, and b) XRD patten of rutile  $\text{TiO}_2$  replicas were obtained through calcination of the HTO microspheres in air at  $450^\circ\text{C}$  for 3 h.

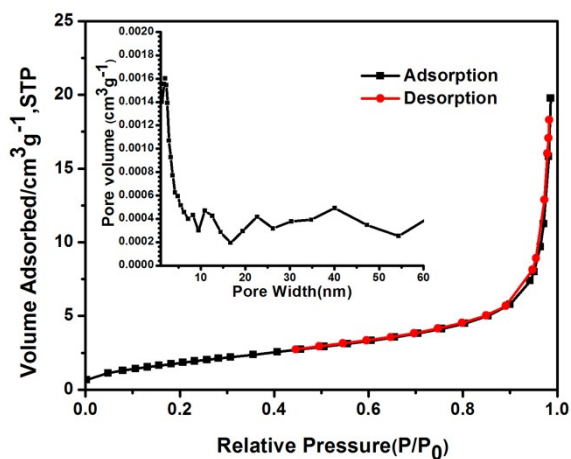


Fig.S3  $\text{N}_2$  adsorption–desorption isotherms of HTO precursor and the corresponding pore-size distribution (inset) .

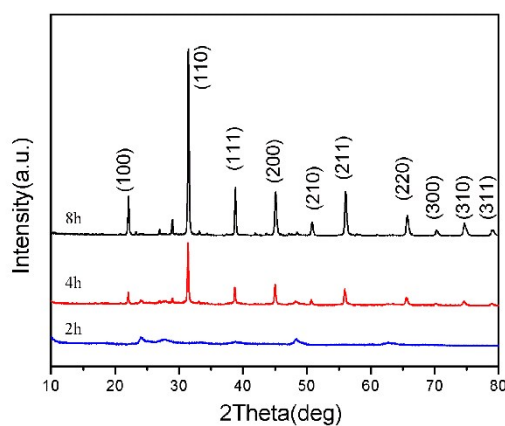


Fig.S4 XRD of the  $\text{BaTiO}_3$  products obtained at  $160^\circ\text{C}$  for different reaction time from 2, 4, to 8 h.

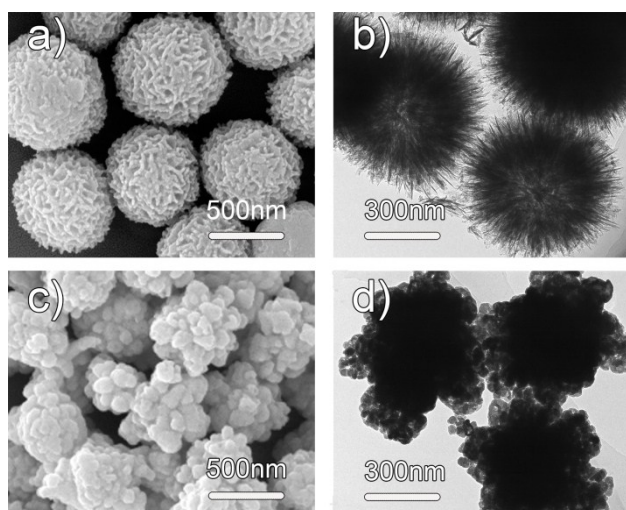


Figure.S5 a ) SEM image, and b) TEM image of the BaTiO<sub>3</sub> nanostructure obtained at 160 °C for 24 h. c ) SEM image, and d) TEM image of the BT-200 obtained at 200 °C for 12 h.

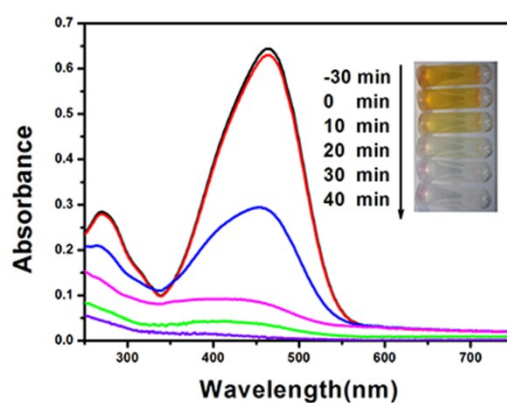


Fig.S6 Absorption spectra and photographs (see the inset) of MO aqueous solution.

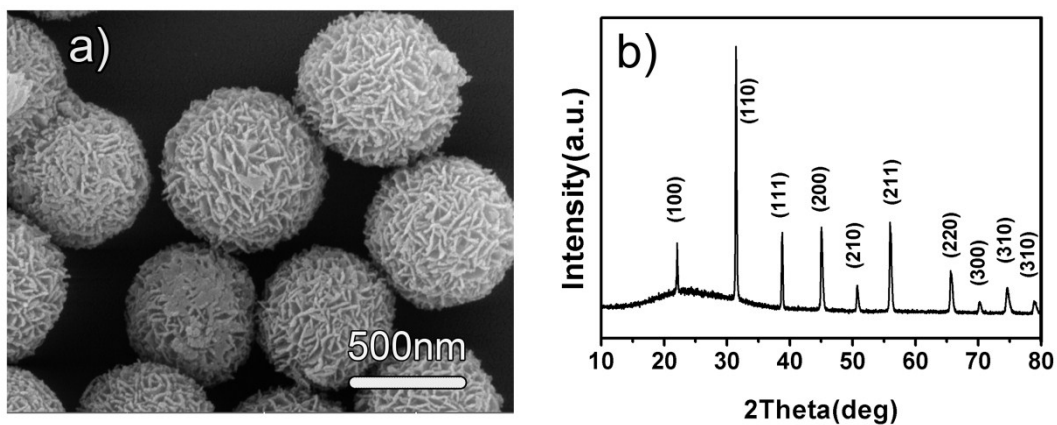


Fig.S7 a) TEM image, and b) XRD patten of BT-160 hierarchical microspheres after photodegradation of MO with 5 cycles.