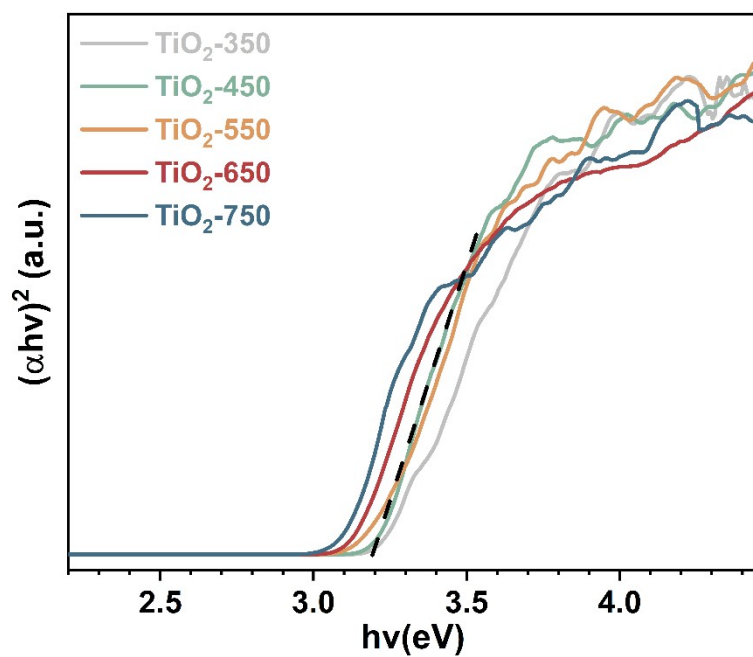


## Supporting Information

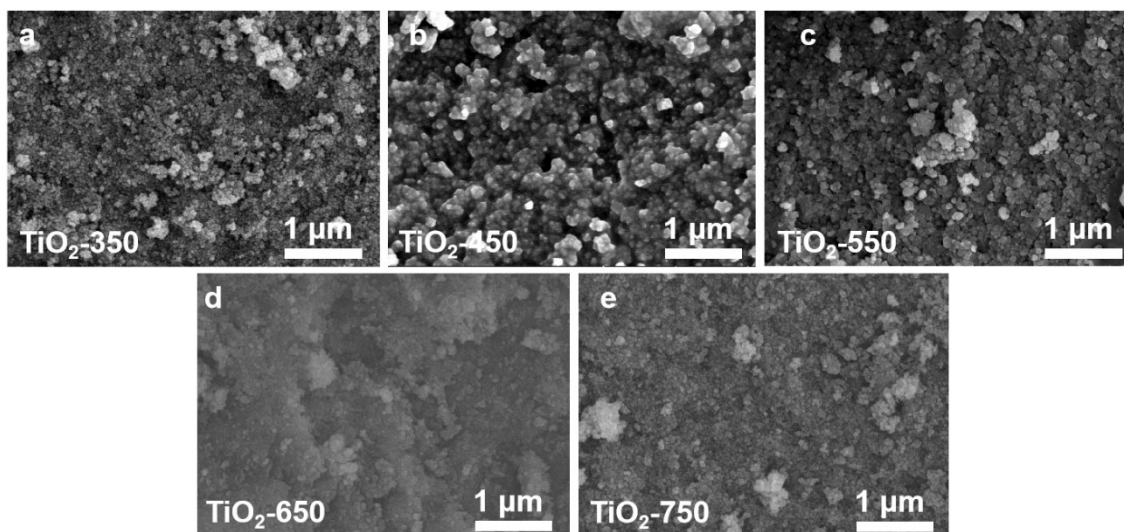
of

### **Photocatalytic upcycling of tetrahydrofurfuryl alcohol to high-value $\gamma$ -hydroxybutyric acid in radioactive organic wastewater**

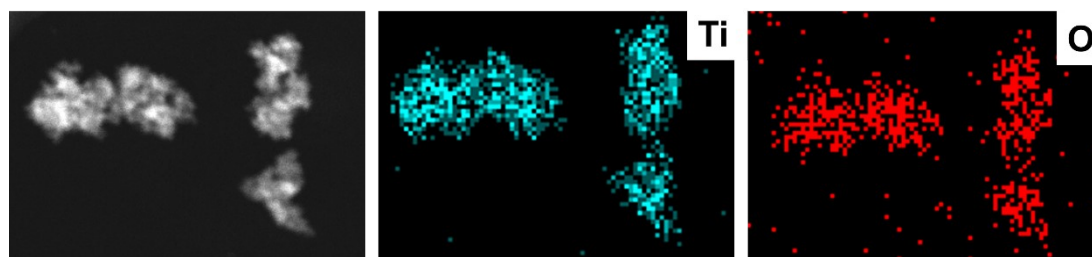
*Zewen Shen<sup>a</sup>, Tao Jiang<sup>a</sup>, Gehong Liu<sup>a</sup>, Jiayi Liu<sup>a</sup>, Yezi Hu<sup>\*a</sup>, Haotian Zhang<sup>a</sup>, Huihui Jin<sup>a</sup>, Bingfeng Li<sup>b</sup>, Shuxian Hu<sup>c</sup>, Xiangke Wang<sup>\*a</sup>, Guixia Zhao<sup>\*a</sup> and xiubing Huang<sup>\*d</sup>*



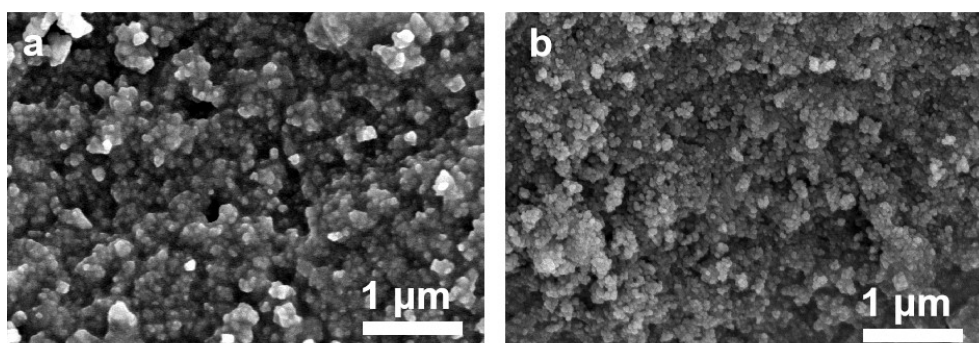
**Fig. S1.** Kubelka–Munk transformed diffuse reflectance spectra of TiO<sub>2</sub>-x.



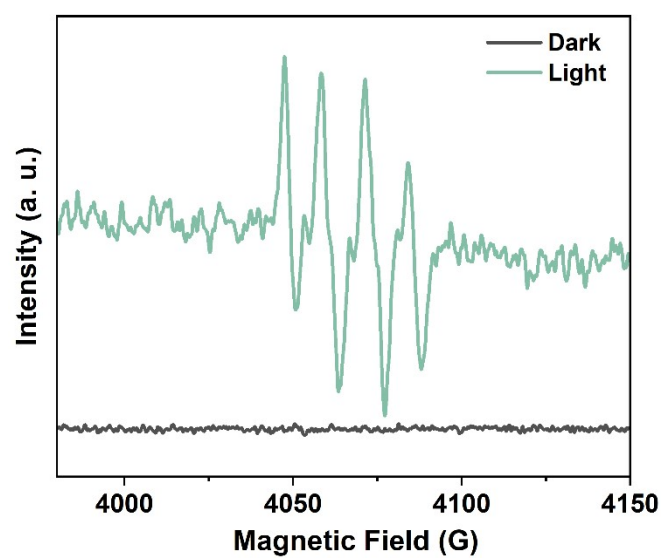
**Fig. S2.** (a-e) SEM images of of TiO<sub>2</sub>-x (x=350, 450, 550, 650, 750) samples.



**Fig. S3.** EDS elemental mapping images of TiO<sub>2</sub>-450.



**Fig. S4.** SEM images of TiO<sub>2</sub>-450: **(a)** before cycling test; **(b)** after seven cycles.



**Fig. S5.** *In-situ* EPR spectra for the detection of  $\cdot\text{O}_2^-$