

## Synthesis and characterization of rGO decorated cubic ZnTiO<sub>3</sub> rods for solar light-induced photodegradation of rhodamine B

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### Supplementary Information

#### Experimental

##### 1. Synthesis of ZnTiO<sub>3</sub> Particles

The ZnTiO<sub>3</sub> particles were synthesized by using liquid precipitation method. At first, 1.5 g Zn(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O (analytical grade, TCI) and 1.7 g Ti(OC<sub>4</sub>H<sub>9</sub>)<sub>4</sub> (analytical grade, TCI) were dissolved in 100 mL glycol, respectively, both of which were mixed together under stirring. The mixed solutions and 25 wt% concentrated ammonia aqueous solution were dropwise added into a 200mL glycol under strongly stirring at 50 °C for 24 h and pH was maintained at a near-neutral during the precipitation process. The precipitated Zn(OH)<sub>2</sub>/TiO(OH)<sub>2</sub> particles were centrifuged and washed with ethanol several times and dried. Finally, as-prepared sample was annealed at 600 °C for 3 h under an air atmosphere to obtain highly crystalline ZnTiO<sub>3</sub> particles. SEM images and XRD patterns of ZTO particles are presented in Fig.S1.

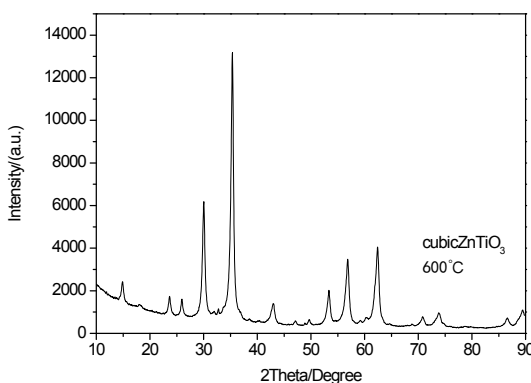
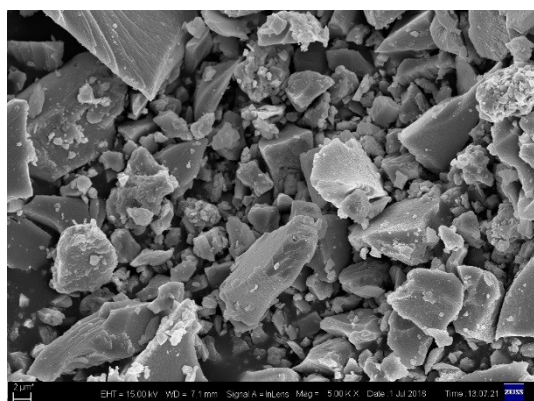


Fig. S1. SEM images and XRD patterns of ZTO particles (scale bar: 2  $\mu\text{m}$ )

## 2. Sample composition

The elemental mapping result of the ZTO and rGO/ZTO-2 sample was characterized by EDX spectrum shown in Fig. S2. It is observed from the spectra that characteristic peaks of Ti, Zn and O are available for both samples. The composition of both samples obtained in terms of atomic percent is listed in Table S1. The results reveal that the molar ratio of Ti to Zn is about 1:1 for both samples, which matches with the stoichiometric composition of the compound.

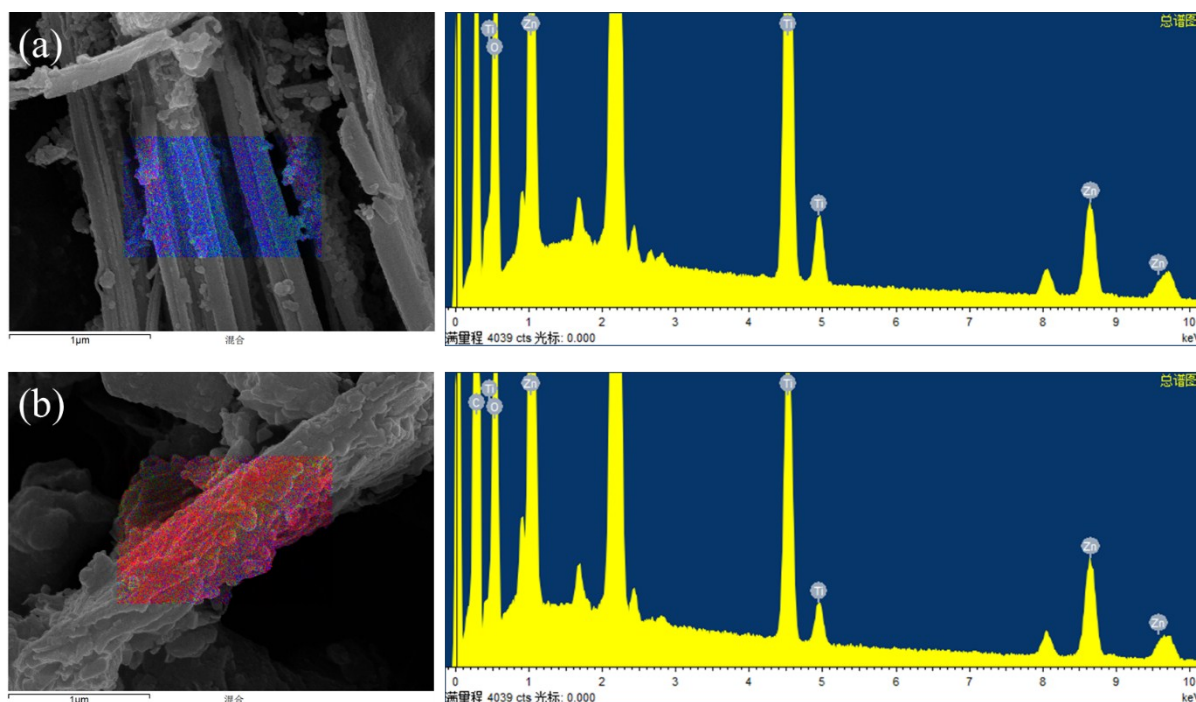


Fig. S2 EDX spectrum of a) ZTO and b) rGO/ZTO-2 rods

Table S1 Atomic composition of ZTO and rGO/ZTO-2 rods

Elements	Atomic % (ZTO)	Atomic % (rGO/ZTO-2)
Zn	16.80	18.51
Ti	18.95	18.91
O	64.25	62.58