

*Electronic Supplementary Information for*

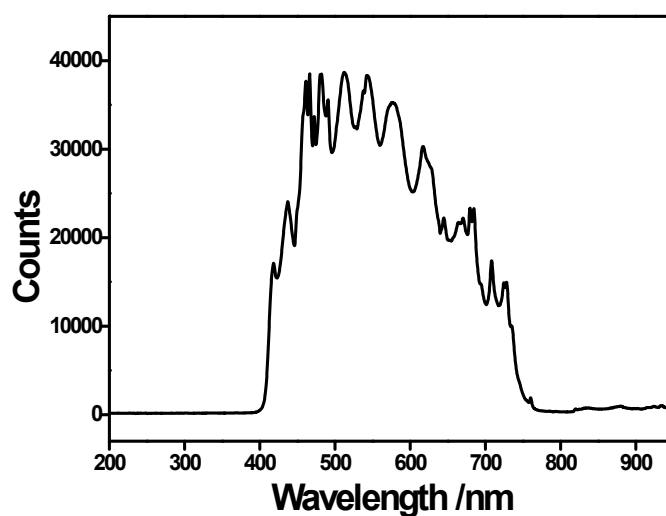
**Solvothermal synthesis of orthorhombic  $\text{Sb}_2\text{WO}_6$  hierarchical structures and their visible-light-driven photocatalytic activity**

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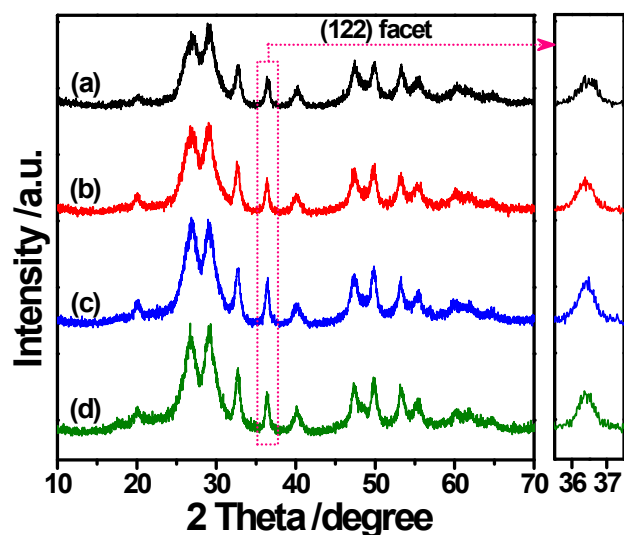
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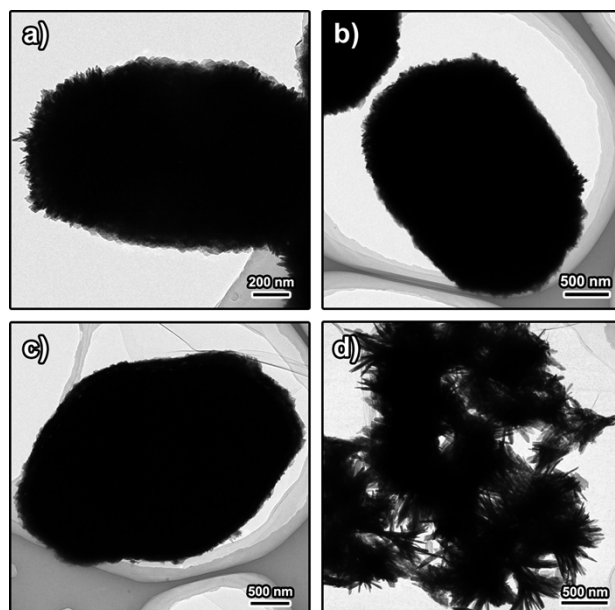


**Fig. S1** The light spectrum of xenon lamp with a 420 nm cut-off filter.

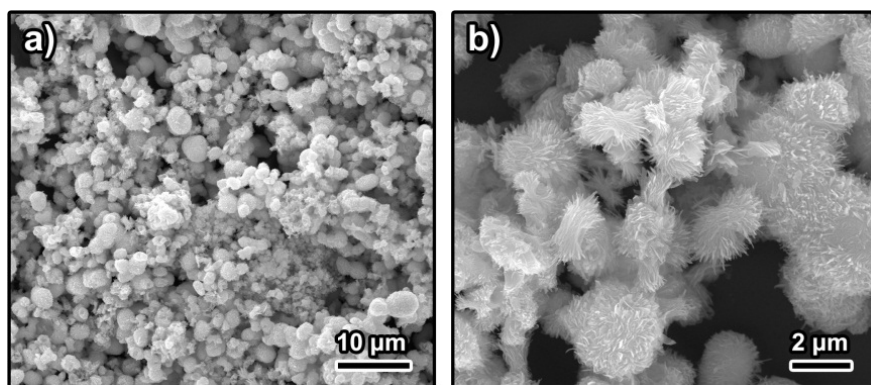


**Fig. S2** XRD patterns of  $\text{Sb}_2\text{WO}_6$  samples prepared with different volume ratios of EG/ $\text{H}_2\text{O}$ . (a) S2; (b) S3; (c) S4; (d) S5.

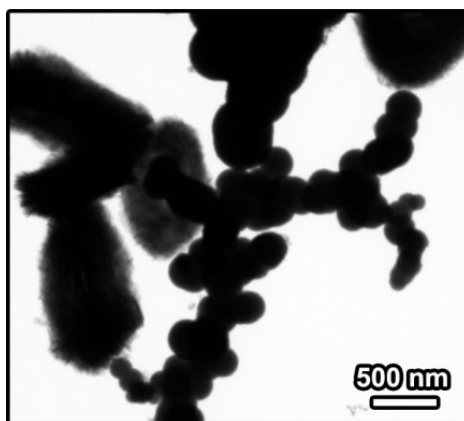
The full width at half maximum (FWHM) of (122) diffraction lines was calculated for comparison of crystallinity. FWHM of samples S2–S5 are 0.571, 0.521, 0.509, 0.526, respectively, and FWHM of sample S1 is 0.479 (see Fig. 1). In addition, the percentage of crystallinity was also calculated. All the samples have high crystallinity, which is estimated to be 98.8%, 96.4%, 97.8%, 98.0% and 97.4% for samples S1, S2, S3, S4 and S5, respectively.



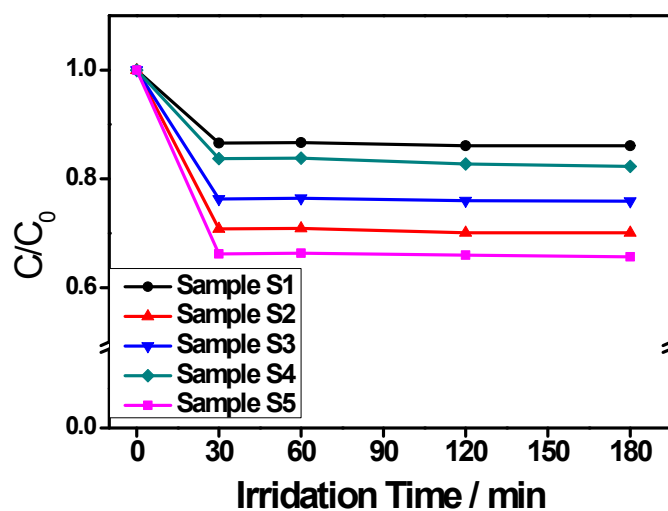
**Fig. S3** TEM images of  $\text{Sb}_2\text{WO}_6$  hierarchical structures prepared at 160 °C for 10 h with different volume ratios of EG/ $\text{H}_2\text{O}$ . (a) 1:1 (S2); (b) 1:2 (S3); (c) 1:5 (S4); (d)  $\text{H}_2\text{O}$  only (S5).



**Fig. S4** SEM images of  $\text{Sb}_2\text{WO}_6$  hierarchical structures prepared at 160°C for 10 h using only  $\text{H}_2\text{O}$  as solvent. (a) Low magnification; (b) high magnification.

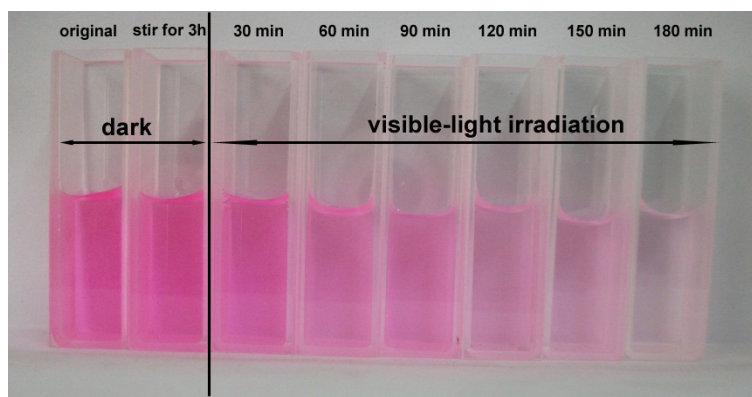


**Fig. S5** TEM image of  $\text{Sb}_2\text{WO}_6$  hierarchical structures prepared at  $160^\circ\text{C}$  for 1 h with EG/ $\text{H}_2\text{O}$  volume ratio of 2:1.

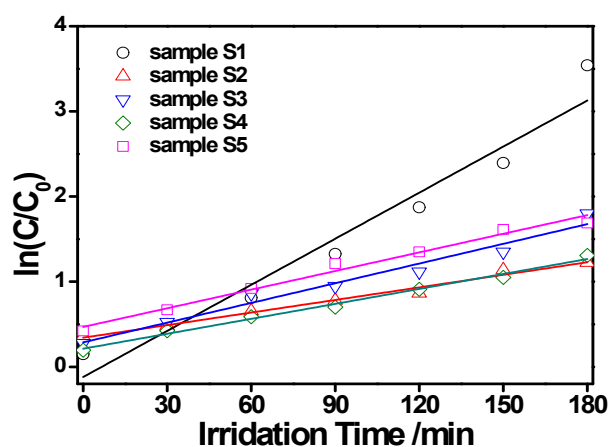


**Fig. S6** Adsorption evolution of RhB solution by different samples in dark.

To confirm the absorption-desorption equilibrium, the blank experiment for up to 180 min has been conducted. As shown in Fig. S6, the concentration of RhB hardly changes after 60 min, indicating the absorption-desorption equilibrium was achieved within 60 min.

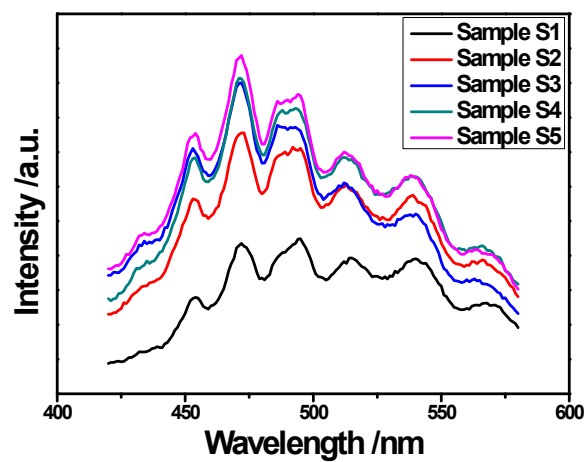


**Fig. S7** Digital photograph of RhB solution showing the color change during the blank experiment and photodegradation process.

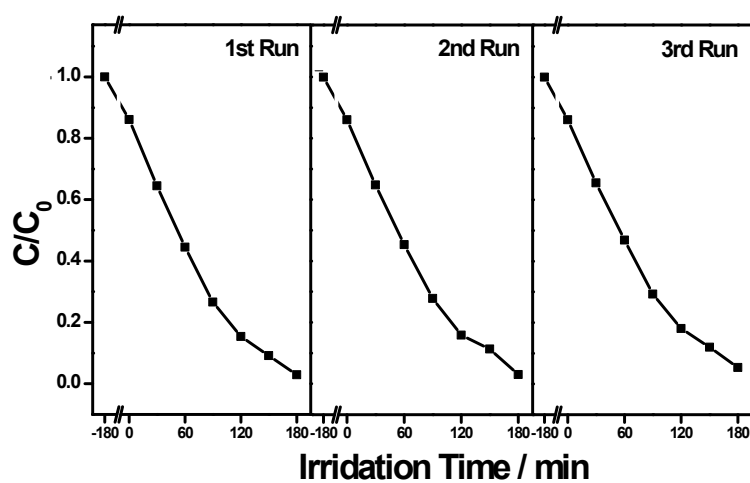


**Fig. S8** The linear fitting of  $\ln(C_0/C)$  vs. reaction time ( $t$ ) over different photocatalysts.

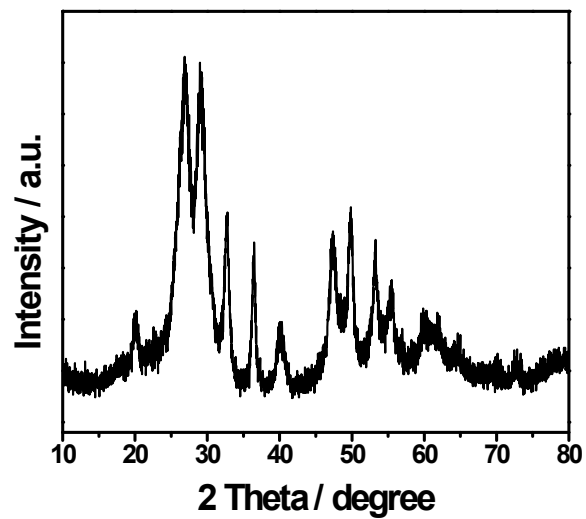
The correlation coefficients,  $R^2$ , for samples S2-S5 were pretty high (0.9485, 0.9829, 0.9636, and 0.9810), while that for sample S1 was at acceptable level (0.8976).



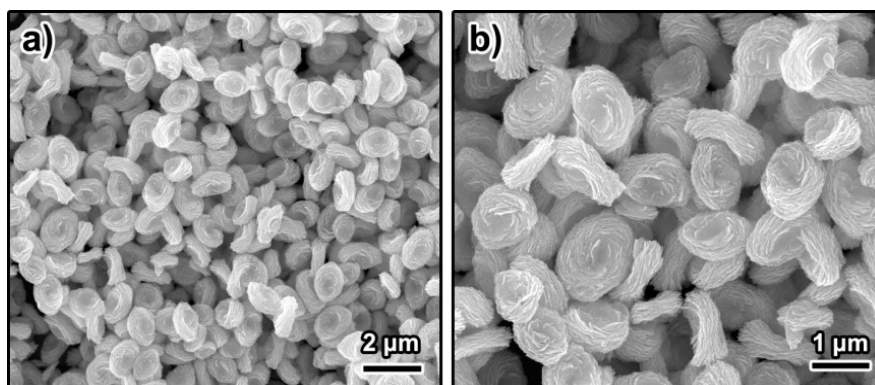
**Fig. S9** PL emission spectra of  $\text{Sb}_2\text{WO}_6$  hierarchical structures prepared at  $160\text{ }^\circ\text{C}$  for 10 h with different volume ratios of EG/ $\text{H}_2\text{O}$ .



**Fig. S10** Photocatalytic activity cycling performance of sample S1 under visible light irradiation.



**Fig. S11** XRD pattern of sample S1 after photocatalytic reaction.



**Fig. S12** SEM images of sample S1 after photocatalytic reaction.