## Supplementary Information

# Shape-selective synthesis of $\mathbf{B i}_{2} \mathbf{W O}_{6}$ hierarchical structures and their morphology-dependent photocatalytic activities 

Hua Lv, ${ }^{\text {ab }}$ Yumin Liu, ${ }^{* a b}$ Jing Guang, ${ }^{\text {ab }}$ Zhiwei Ding ${ }^{\text {ab }}$ and Jianji Wang ${ }^{* a b}$
${ }^{\mathrm{a}}$ Collaborative Innovation Center of Henan Province for Green Manufacturing of Fine Chemicals, Key Laboratory of Green Chemical Media and Reactions, Ministry of Education, Henan Normal University, Xinxiang, Henan 453007, P. R. China.
${ }^{\text {b }}$ Henan Key Laboratory of Green Chemistry, School of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang, Henan 453007, P. R. China

* To whom correspondence should be addressed. Tel: +86 373 3326335; Fax: +86 3733326336.

E-mail addresses: hualv2009@163.com (Y Liu), jwang@htu.cn (J Wang).


Fig. S1. XRD patterns of $\mathrm{Bi}_{2} \mathrm{WO}_{6}$ samples synthesized at different pH values in the absence of L -
lysine.


Fig. S2. SEM images of $\mathrm{Bi}_{2} \mathrm{WO}_{6}$ samples synthesized at (a) $\mathrm{pH}=1$, (b) $\mathrm{pH}=6$, and (c) $\mathrm{pH}=11$
without using L-lysine.


Fig. S3. XRD patterns of flower-like $\mathrm{Bi}_{2} \mathrm{WO}_{6}$ microspheres prepared at different hydrothermal time.


Fig. S4. XRD patterns of clew-like $\mathrm{Bi}_{2} \mathrm{WO}_{6}$ microspheres prepared at different hydrothermal time.


Fig. S5. SEM images of clew-like $\mathrm{Bi}_{2} \mathrm{WO}_{6}$ microspheres prepared at different hydrothermal time:
(a) 1 h, (b) 2 h (c) 6 h (d) 12 h .


Fig. S6. SEM images of $\mathrm{Bi}_{2} \mathrm{WO}_{6}$ nanoplates prepared at different hydrothermal time: (a) 1 h , (b) 2
h(c) $6 \mathrm{~h}(\mathrm{~d}) 12 \mathrm{~h}$.


Fig. S7. XRD patterns of $\mathrm{Bi}_{2} \mathrm{WO}_{6}$ nanoplates prepared at different hydrothermal time.


Fig. S8. Effects of L-lysine on the photocatalytic activities of $\mathrm{Bi}_{2} \mathrm{WO}_{6}$ samples.


Fig. S9. Cycling runs of the flower-like $\mathrm{Bi}_{2} \mathrm{WO}_{6}$ under visible light irradiation $\left(\mathrm{C}_{\mathrm{e}}\right.$ is the absorption of RhB when the adsorption-desorption equilibrium is reached).


Fig. S10. XRD pattern of BWO-1 sample after four cycling runs.


Fig. S11. SEM image of BWO-1 sample after four cycling runs.

