Supporting Information

Controllable synthesis of hollow/flower-like BiOI microspheres and highly efficient adsorption and photocatalytic activity

Kuaixia Ren, Kun Zhang, Jie Liu, Hongde Luo, Yunbo Huang, Xibin Yu*

Key Laboratory of Resource Chemistry of Ministry of Education, Shanghai Key Laboratory of Rare Earth Functional Materials
College of Life and Environmental Science, Shanghai Normal University, Shanghai 200234, P. R. China

Fig. S1 The influence of the reactants concentration on the morphology of the BiOI: (a) 1ml Bi source and 0.0338g NaI, (b) 6ml Bi source and 0.2025g NaI and (c) 8ml Bi source and 0.2700g NaI.
**Fig. S2** The influence of assistant agents on the morphology of the BiOI: (a, b) with PVP only existed, (c, d) with citric acid only existed.

**Fig. S3** FESEM images of the hollow microspheres: (a) 0 min, (b) 15 min, (c) 30 min and (d) 45 min; XRD patterns (e) and EDS patterns (f) of products at different reaction stages.
**Fig. S4** Typical N2 gas adsorption-desorption isotherm of the BiOI samples in different morphological structure: (a) the nanoplates; (b) the flower-like microspheres; and (c) the hollow microspheres. Insets: the corresponding pore-size distribution.
**Fig. S5** The adsorption spectra of an aqueous solution of RhB in the presence of the hollow microspheres.

**Fig. S6** Recycling test of the photodegradation of RhB on the flower-like microspheres under visible-light irradiation.
**Fig. S7** FESEM images of the flower-like microspheres after the photocatalytic reaction.