

## Supplementary Materials for

### Enhanced visible light photocatalytic performance of a novel heterostructured $\text{Bi}_4\text{Ti}_3\text{O}_{12}/\text{BiOBr}$ photocatalyst

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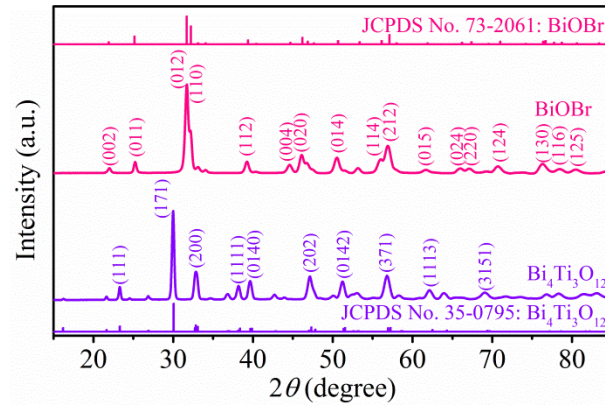


Fig. S1. XRD patterns of as-prepared  $\text{Bi}_4\text{Ti}_3\text{O}_{12}$  and  $\text{BiOBr}$ .

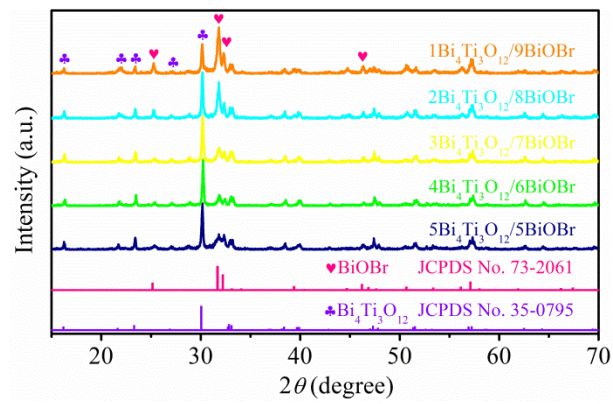


Fig. S2. XRD patterns of as-prepared  $5\text{Bi}_4\text{Ti}_3\text{O}_{12}/5\text{BiOBr}$ ,  $4\text{Bi}_4\text{Ti}_3\text{O}_{12}/6\text{BiOBr}$ ,  $3\text{Bi}_4\text{Ti}_3\text{O}_{12}/7\text{BiOBr}$ ,  $2\text{Bi}_4\text{Ti}_3\text{O}_{12}/8\text{BiOBr}$ , and  $1\text{Bi}_4\text{Ti}_3\text{O}_{12}/9\text{BiOBr}$ .

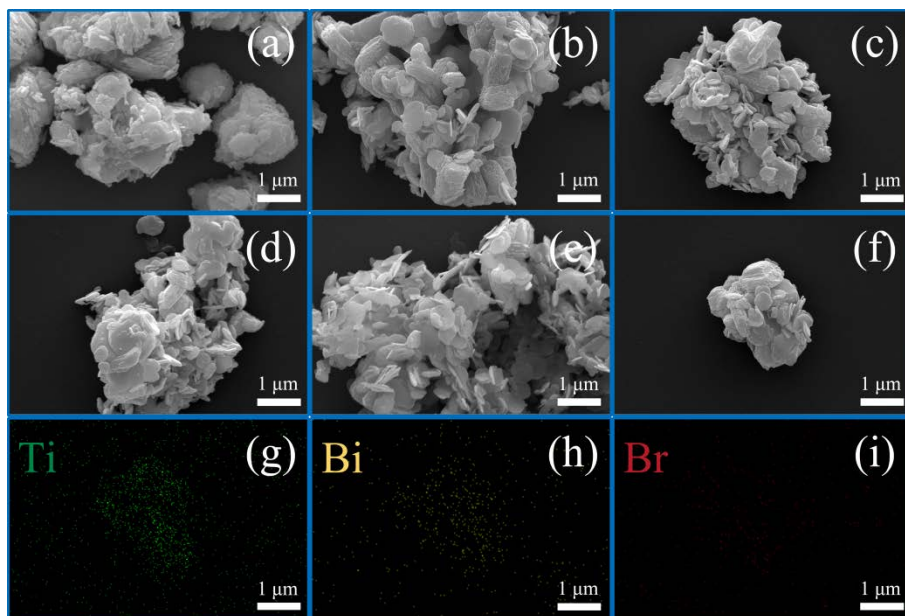


Fig. S3. SEM images of (a) 5Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/5BiOBr, (b) 4Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/6BiOBr, (c) 3Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/7BiOBr, (d) 2Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/8BiOBr, (e) 1Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/9BiOBr, and individual (f) 5Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/5BiOBr after ultrasonic concussion for 2 h, (g-i) Element mappings of individual 5Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/5BiOBr.

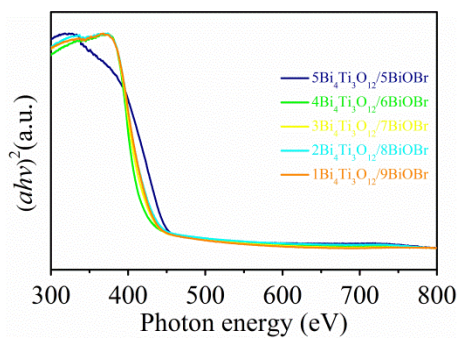


Fig. S4. UV-vis diffuse reflectance spectra of as-prepared 5Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/5BiOBr, 4Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/6BiOBr, 3Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/7BiOBr, 2Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/8BiOBr, and 1Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>/9BiOBr.