Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Effect of iron doping on the photocatalytic activity of Bi_2WO_6-$BiVO_4$ composite

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Photocatalytic activity testing

For comparison, the photocatalytic activity of 2.0 mol% Fe-doped $BiVO_4$ and 2.0 mol% Fe-doped Bi_2WO_6 were evaluated as shown in Fig. S1. The photocatalytic activity of 2.0 mol% Fe-doped Bi_2WO_6-$BiVO_4$ composite is better than that of pure and other doped samples.

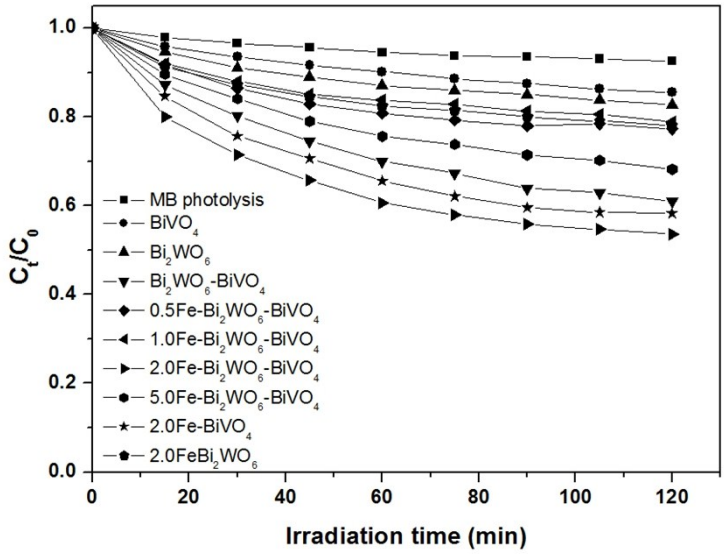

Fig. S1 Photocatalytic activities relationship between C_t/C_0 versus irradiation time of all photocatalysts in the degradation of MB under visible light irradiation for 2 h.

Photoluminescence

The photoluminescence spectra for the 2.0 mol% Fe-doped $BiVO_4$ and 2.0 mol% Fe-doped Bi_2WO_6 samples were given for comparing in Fig. S2. The PL intensities of these materials were higher than that of 2.0 mol% Fe-doped Bi_2WO_6-$BiVO_4$ composite. This suggests that the electron and hole pairs can be recombined quickly, resulting in decreasing the photocatalytic activity.

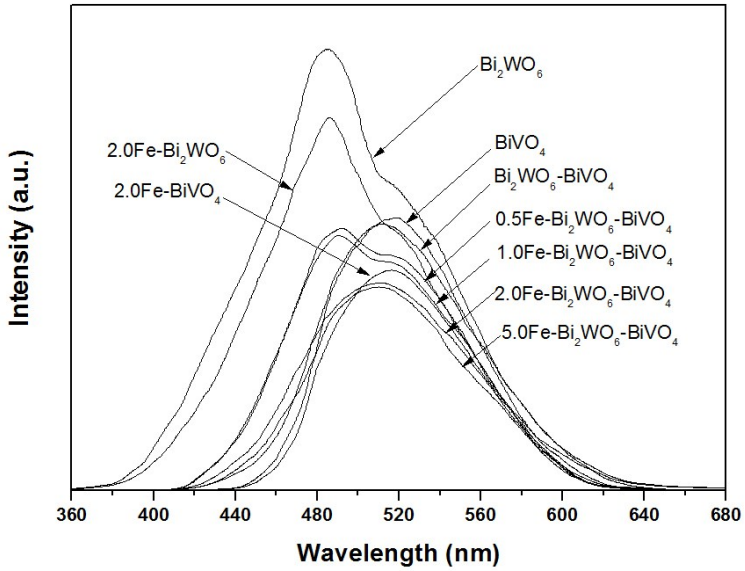

Fig. S2 Photoluminescence spectra of all samples.