

Supporting Information

One-pot construction of robust BiOCl/ZnO p-n heterojunctions toward improving charge separation for photodegradation enhancement

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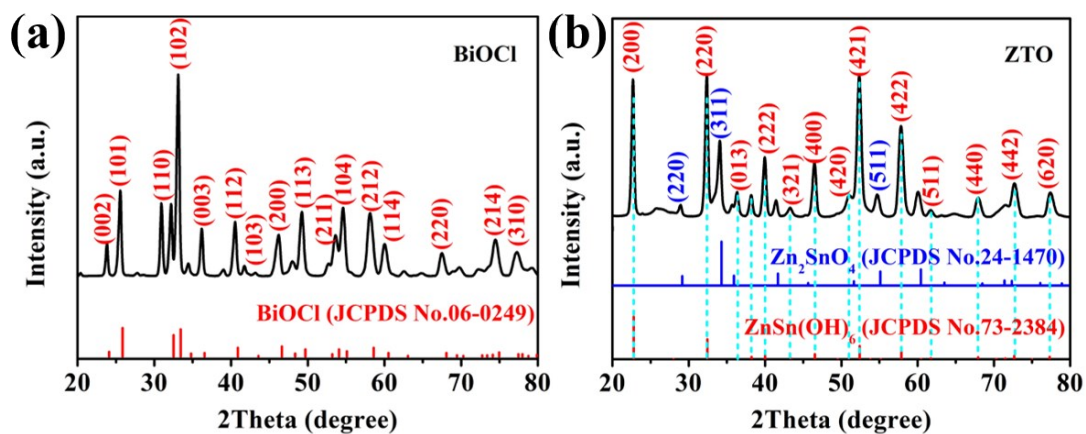


Fig. S1 XRD patterns of the as-prepared (a) BiOCl and (b) ZTO.

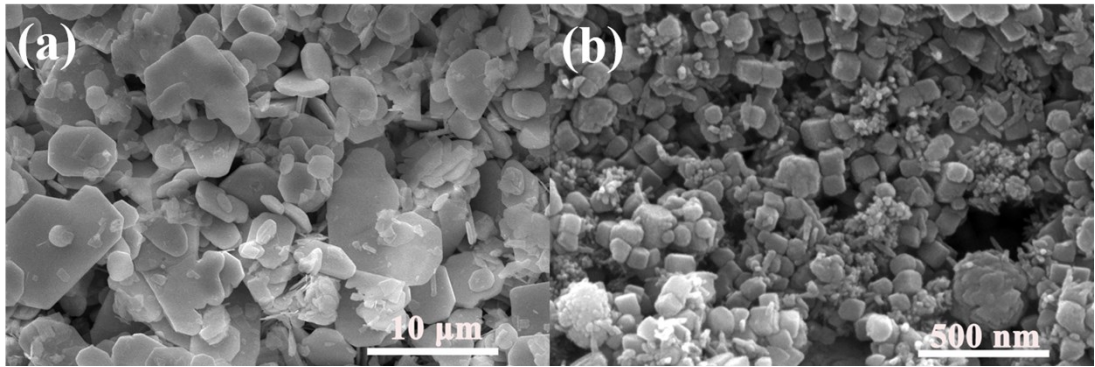


Fig. S2 SEM images of (a) BiOCl and (b) ZTO.

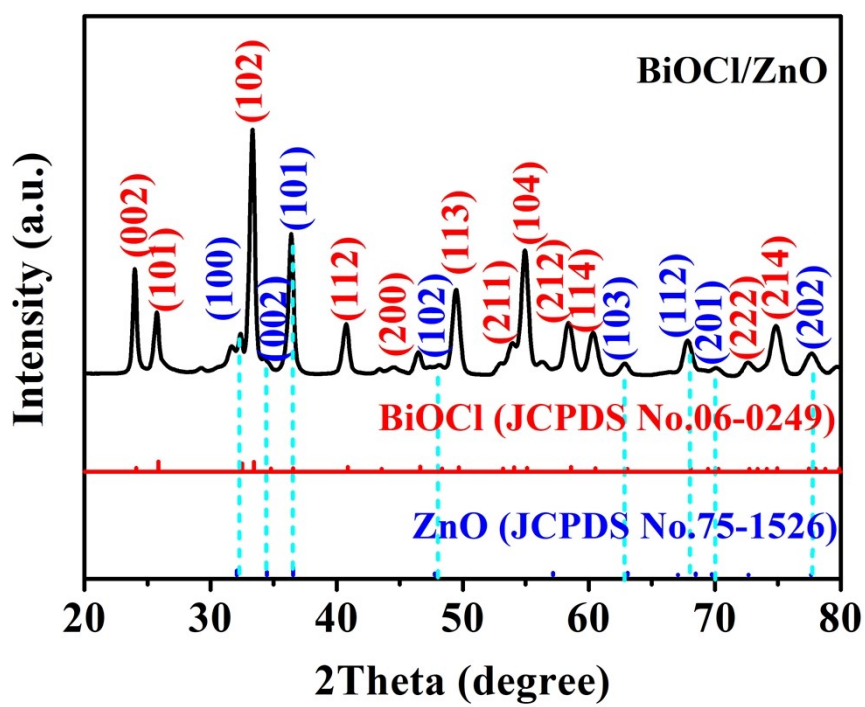


Fig. S3 XRD pattern of the as-prepared BZ-0.67-S.

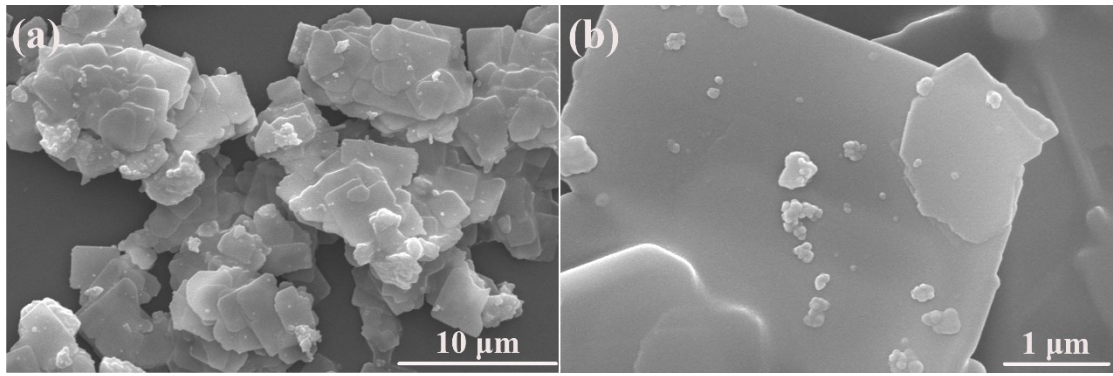


Fig. S4 SEM images of BZ-0.67-S.

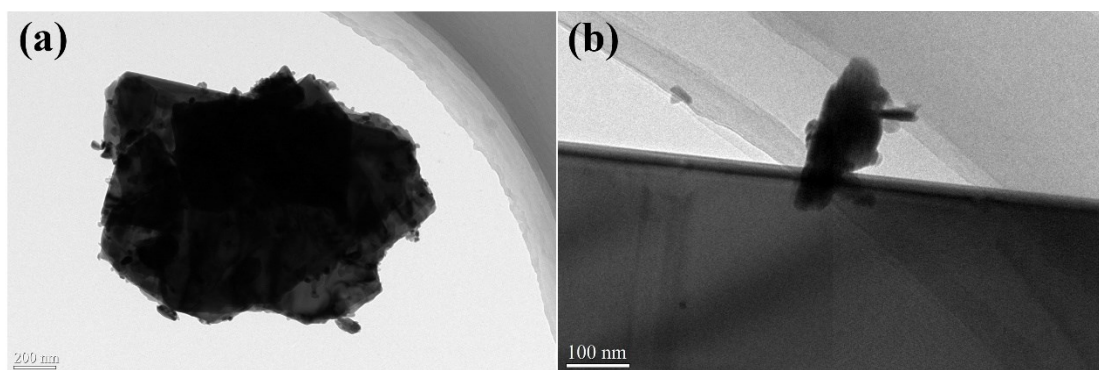


Fig. S5 TEM images of BZ-0.67-S.

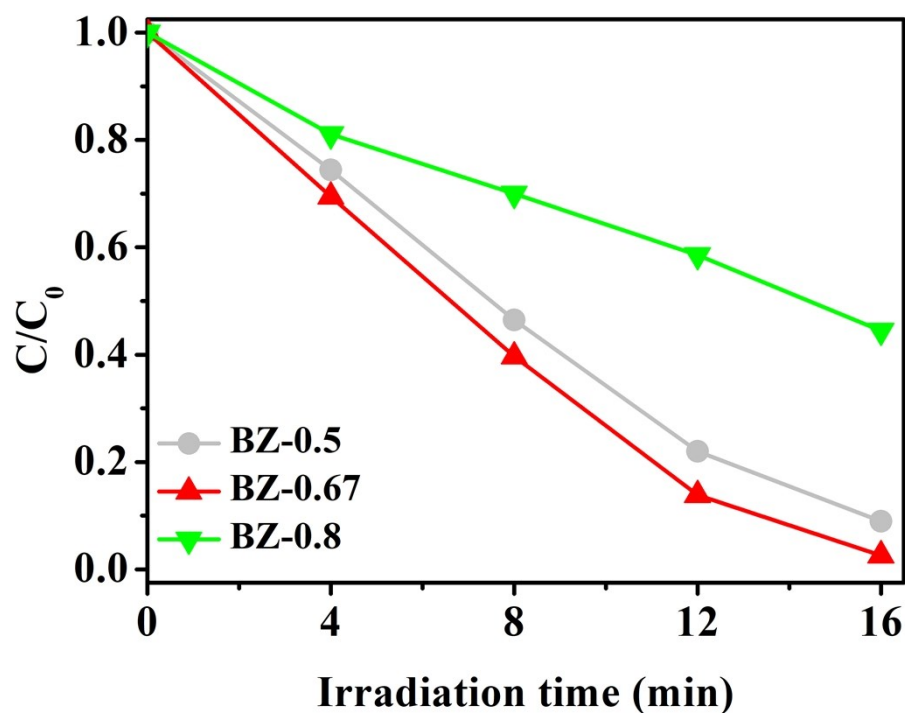


Fig. S6 Photocatalytic degradation of RhB solution by BZ-0.5, BZ-0.67 and BZ-0.8, respectively.

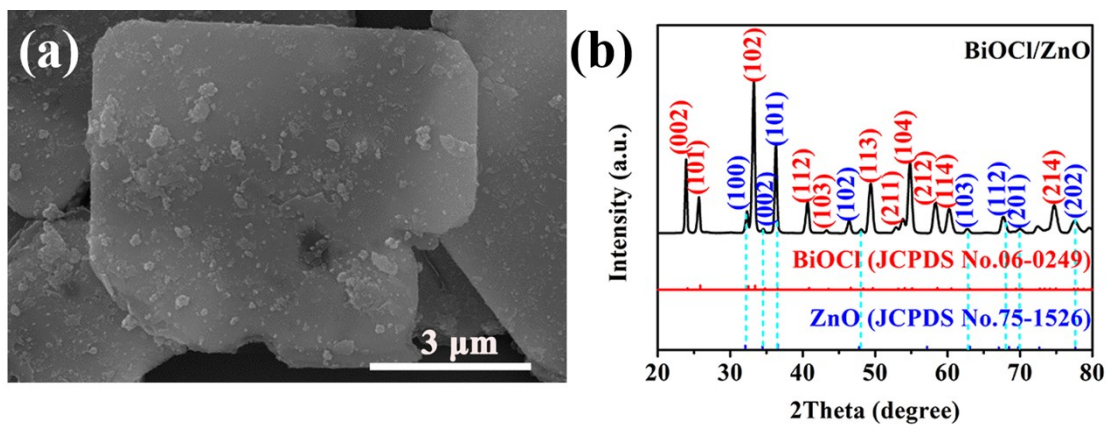


Fig. S7 (a) SEM image and (b) XRD pattern of BZ-0.67 after recycling test.

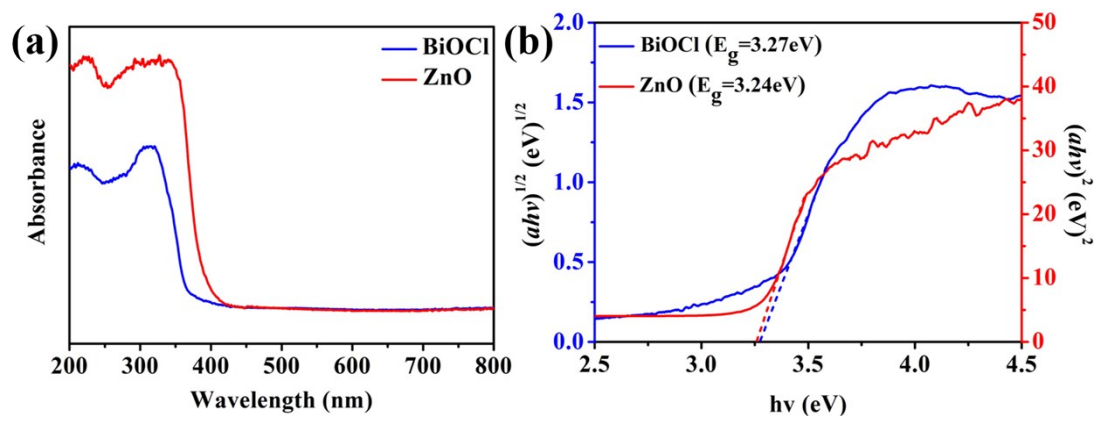


Fig. S8 (a) UV-vis diffuse reflectance spectra of BiOCl and ZnO; (b) plots of $(ah\nu)^{1/2}$ and $(ah\nu)^2$ versus photo energy ($h\nu$) of BiOCl and ZnO, respectively.

Table S1 The rate constants (k) for photodegradation of BiOCl/ZnO reported in literatures and this work.

Sample	Substrate	Rate constants (k)	Ref.
BiOCl/ZnO	RhB	0.0073	[1]
BiOCl/ZnO	RhB	0.408	[2]
BiOCl/ZnO	TC-HCl	0.024	[3]
BiOCl/ZnO	RhB	0.19	This work
BiOCl/ZnO	TC	0.049	This work

Table S2 ICP results of the leaching metal in solution after reaction over BZ-0.67.

Element content (ppm)	
Bi	Zn
2	1.9

- [1] X.R. Zhang, Y.W. Huo, M. Shakeel, B.S. Li, L. Wang, J.J. Liu and S.L. Zuo, *ChemistrySelect*, 2020, **5**, 1640-1647.
- [2] J.Q. Chang, Y. Zhong, C.H. Hu, J.L. Luo and P.G. Wang, *J. Mol. Struct.*, 2019, **1183**, 209-216.
- [3] X.Q. Liu, H.M. Xu, D.Y. Li, Z.W. Zou and D.S. Xia, *ChemistrySelect*, 2019, **4**, 12245-12251.