

Excellent Adsorption-Photocatalysis Synergistic Activity of 3D-3D Flower-like BiOBr/Graphene Hydrogel Composite and the Removal of PBX

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Supporting information

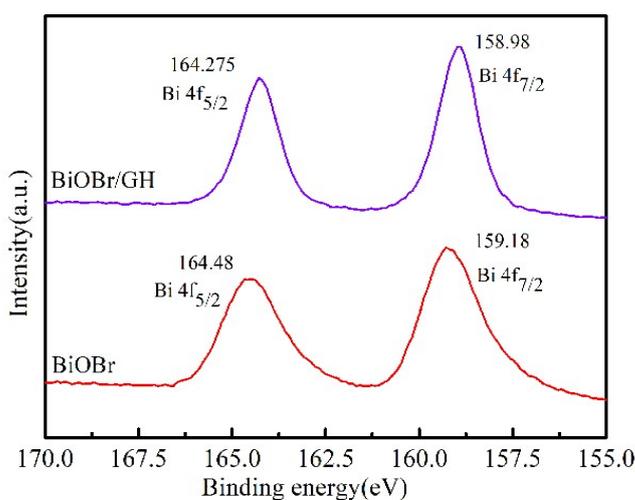


Fig. S1 XPS spectra of Bi 4f of BiOBr and 80%-GH/BiOBr composites

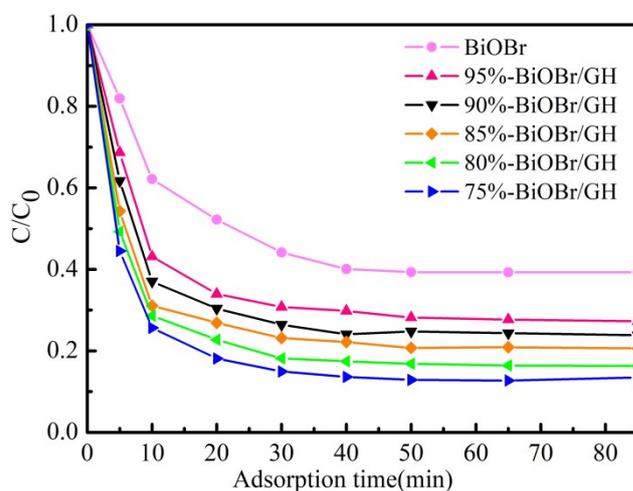


Fig. S2 Adsorption efficiency of PBX by BiOBr and composites (The dosage of all adsorbents was 25 mg, initial concentration of PBX was 40 mg/L, the reaction temperature was 298 K)

Table S1 Fitting adsorption kinetic models of PBX on 75%-BiOBr/GH

C_0 (mg/L)	$q_{e(\text{exp})}$ (mg/g)	Pseudo-first-order model			Pseudo-second-order model		
		$q_{e(\text{cal})}$ (mg/g)	K_1 (min^{-1})	R^2	$q_{e(\text{cal})}$ (mg/g)	K_2 (min^{-1})	R^2
40mg/L	66.70	51.73	0.13	0.97145	74.46	0.0046	0.99926

Table S2 Fitting results of Langmuir and Freundlich isotherm

Langmuir isotherm			Freundlich isotherm		
Q_{max} (mg/g)	b (L/mg)	R^2	K_F ($mg^{1-1/n}L^{1/n}/g$)	n	R^2
120	0.2416	0.29204	11.53	1.5941	0.96378

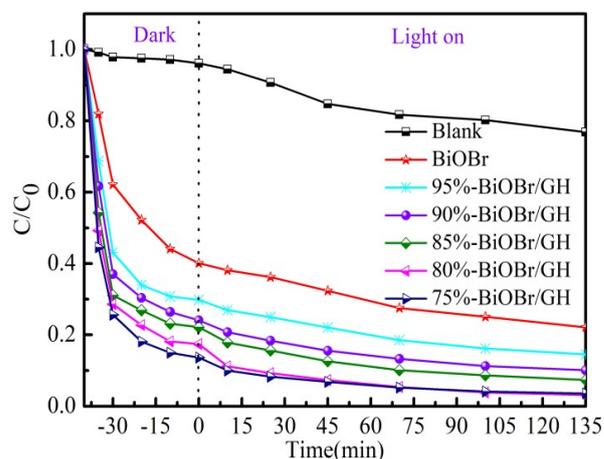


Fig. S3 Removal efficiency of PBX by dark reaction- photocatalysis

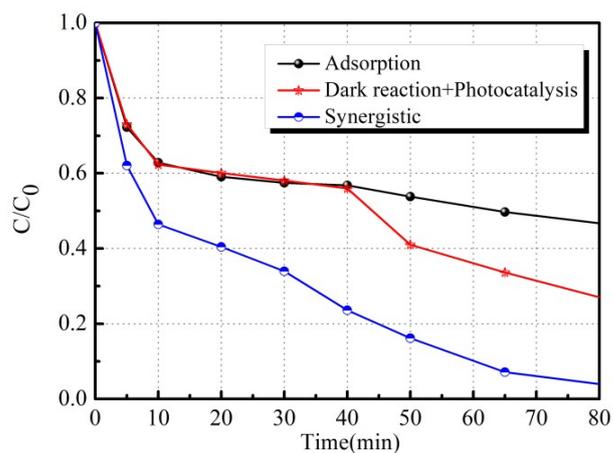


Fig. S4 Comparison of adsorption, photocatalysis, and synergistic efficiency of PBX by 75%-BiOBr /GH. (The dosage of 75%-BiOBr /GH was 25 mg, the initial concentration of PBX was 40 mg/L, the volume of PBX was 100 mL)

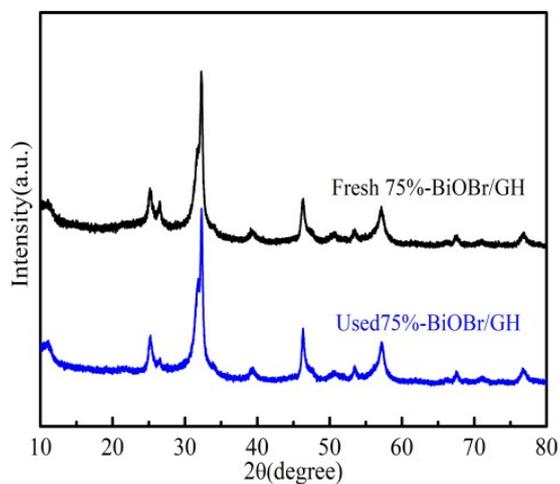


Fig. S5 XRD patterns of 75%-BiOBr/GH before and after 6th run cycle synergistic experiments

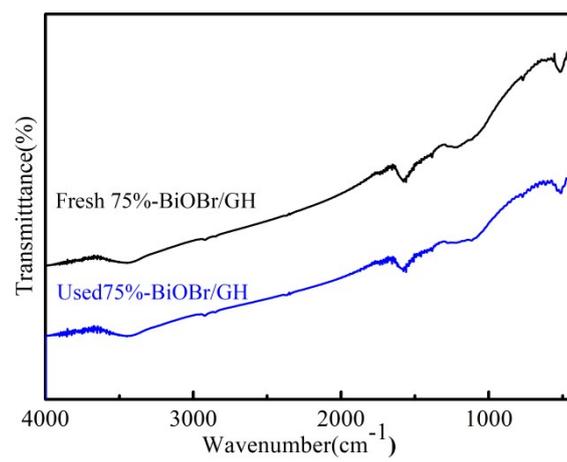


Fig.S6 FT-IR spectra of 75%-BiOBr/GH before use and after 6 recycled