Construction of hydrangea-like Bi_2WO_6/BiOCl composite for high-performance photocatalyst

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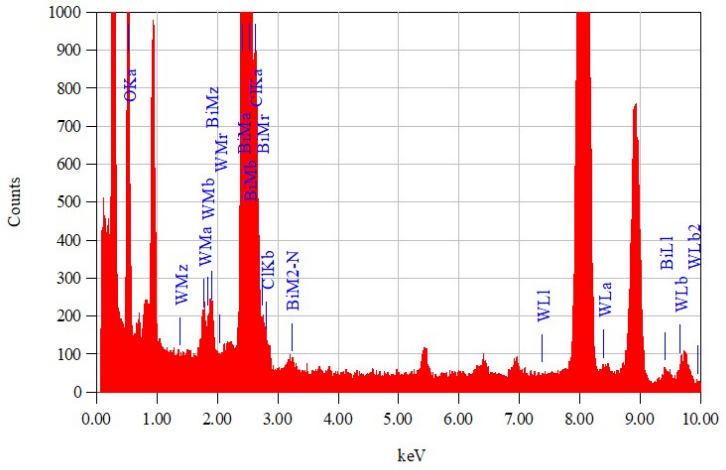

Element	(keV)	Mass%	Counts	Sigma	Atom%
O K	0.525	8.17	5968.69	0.19	45.77
Cl K	2.621	7.04	7350.96	0.18	17.78
W M	1.774	1.98	714.27	0.20	0.96
Bi M (Ref.)	2.419	82.81	21157.94	1.09	35.49
Total		100.00			100.00

Fig. S1. Elemental fraction of Bi_2WO_6/BiOCl-1/1 composite derived from the elemental mapping from Fig. 3.

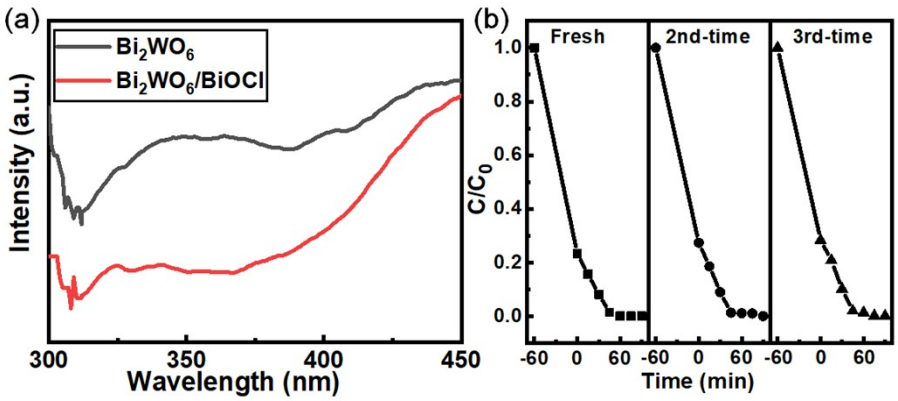

Fig. S2. Photoluminescence (PL) emission spectra (a) and the cycling degradation performance for degradation of RhB by using Bi_2WO_6/BiOCl-1/1 composite (b).

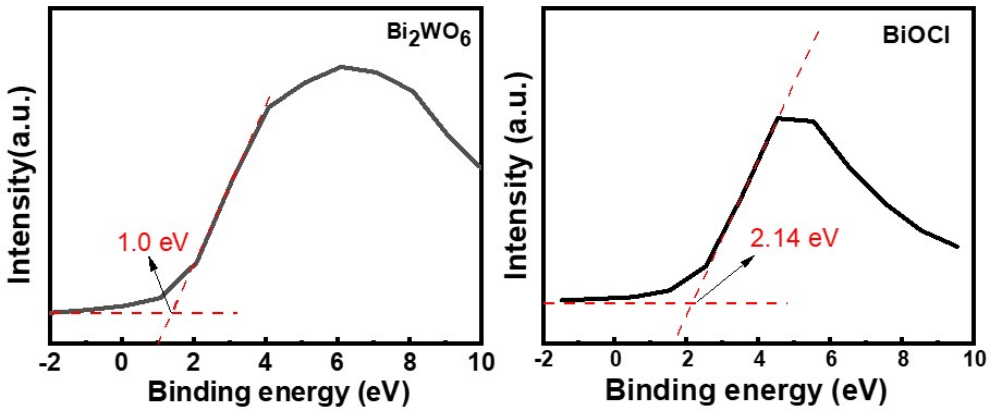

Fig. S3. Magnified XPS spectrum of (a) Bi_2WO_6 and (b) BiOCl, and corresponding valence band edge

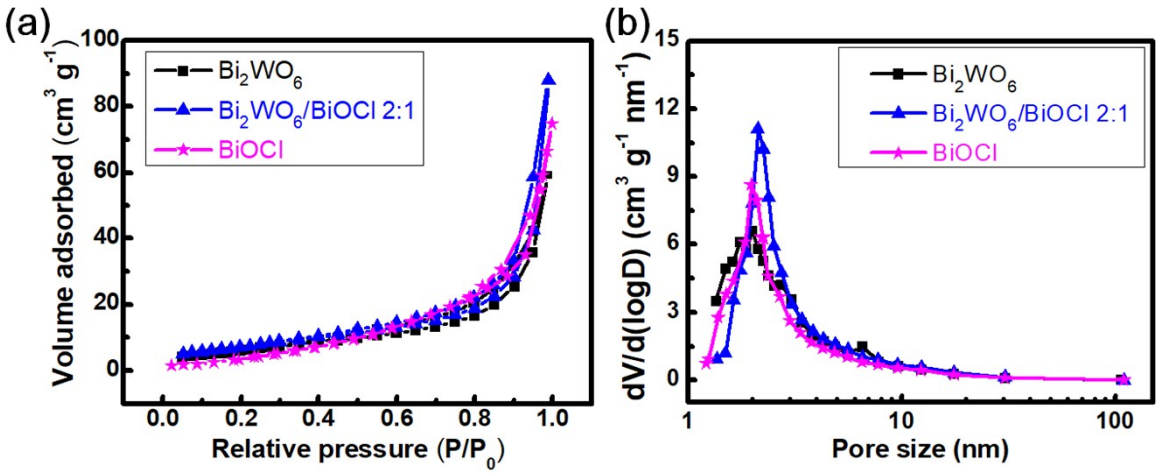

Fig. S4 the BET specific surface area and corresponding pore size distribution of different samples.

Table S1. The linear fitting results obtained from Fig. 5

Pollutants	*Sample*	*Reaction rate constant, k (min^{-1})*	*Intercept*
	Bi_2WO_6	0.0036	0.3812
RhB solution	BiOCl	0.0040	0.7190
(Fig. 5c)	Bi_2WO_6/BiOCl-2/1	0.0126	0.6528
	Bi_2WO_6/BiOCl-1/1	0.0941	0.6567
	Bi_2WO_6/BiOCl-1/2	0.0049	0.9828
MB solution	Bi_2WO_6	0.0036	0.3812
(Fig. 5f)	BiOCl	0.0045	0.4813
	Bi_2WO_6/BiOCl-2/1	0.0048	0.8212
	Bi_2WO_6/BiOCl-1/1	0.0063	1.5823
	Bi_2WO_6/BiOCl-1/2	0.0060	0.6149
TCH solution	Bi_2WO_6	0.00691	0.46162
(Fig. 5i)	BiOCl	0.00941	0.52503
	Bi_2WO_6/BiOCl-2/1	0.01143	0.64883
	Bi_2WO_6/BiOCl-1/1	0.0143	0.73799
	Bi_2WO_6/BiOCl-1/2	0.01174	0.60182

Table S2. The performance of reported Bi_2WO_6/BiOCl composite photocatalyst in degradation of organic dyes

Photocatalyst	Concent.	Light	Degrad.	Time	Morphology	Ref.
Bi_2WO_6/BiOCl 25mg/50mL	10 mg L^{-1}	300W-Xe	RhB 100%	60 min	Hydrangea-like Bi_2WO_6/ BiOCl composite	This work
Bi_2WO_6/BiOCl	RhB	Xe lamp	RhB	Adsorption	Hollow hierarchical structure	[33]
Bi_2WO_6/BiOCl 100mg/100mL	10 mg L^{-1}	300W-Xe	RhB 98%	5 min	Single crystalline Bi_2WO_6 + polycrystalline BiOCl	[34]
Bi_2WO_6/BiOCl 30mg/100mL	10 mg L^{-1}	300W-Xe	RhB ~95%	90 min	BiOCl microspheres+Bi_2WO_6 nanosheets	[21]
Bi_2WO_6/BiOCl 100mg/100mL	50 mg L^{-1}	350W-Xe	RhB 93.3%	150 min	BiOCl sheets + Bi_2WO_6 plates	[12]
Bi_2WO_6/BiOCl 50mg/50mL	5 mg L^{-1}	300 W-Xe	RhB 99%	100 min	Microrods coated nanoparticles	[20]
Bi_2WO_6/BiOCl 45mg in 45mL	10 mg L^{-1}	55W-Xe	RhB 65%	80 min	Nanostructured sheets	[16]
Bi_2WO_6/BiOCl 10mg/60mL	10 mg L^{-1}	55W-Xe	RhB 100%	80 min	Bi_2WO_6 microspheres and BiOCl nanosheets	[19]

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