

# Supporting information

## Effective BiOCl electrons collector for enhancing photocarrier separation of Bi<sub>2</sub>WO<sub>6</sub>/BiOCl composite

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Stepwise synthesis of bismuth tungstate / bismuth oxychloride with bismuth tungstate as substrate

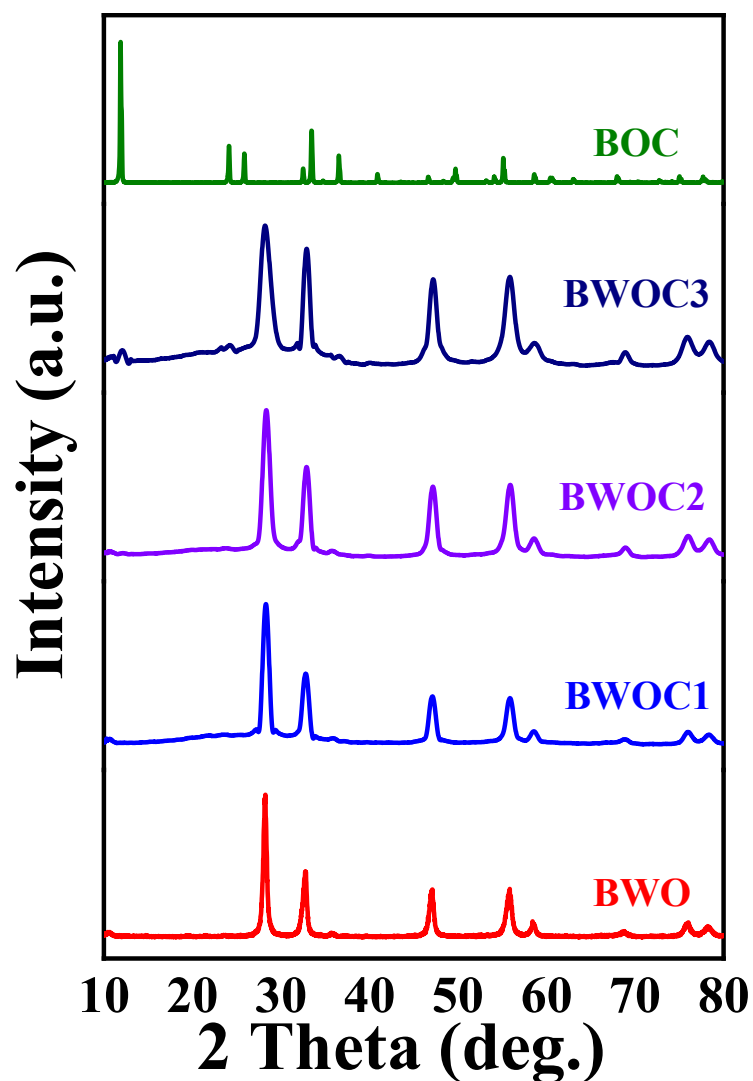


Figure S1. XRD patterns of the prepared samples: Bi<sub>2</sub>WO<sub>6</sub> (BWO), Bi<sub>2</sub>WO<sub>6</sub>/BiOCl composites (BWOC1-3) and BiOCl (BOC).

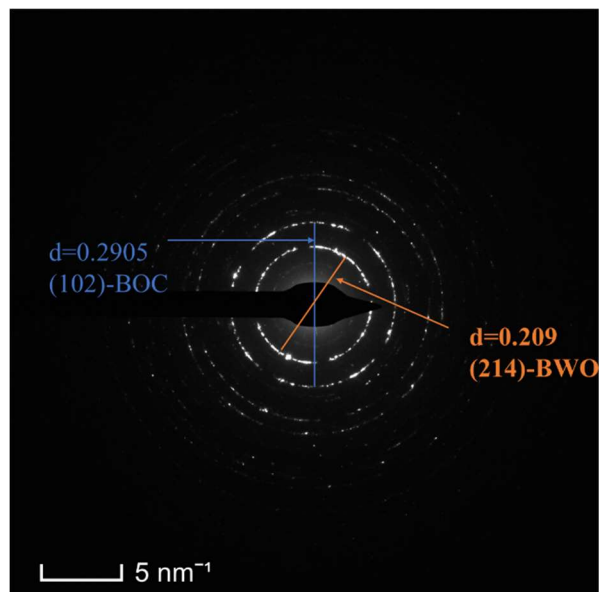


Figure S2. SADE of BWOC2 sample.

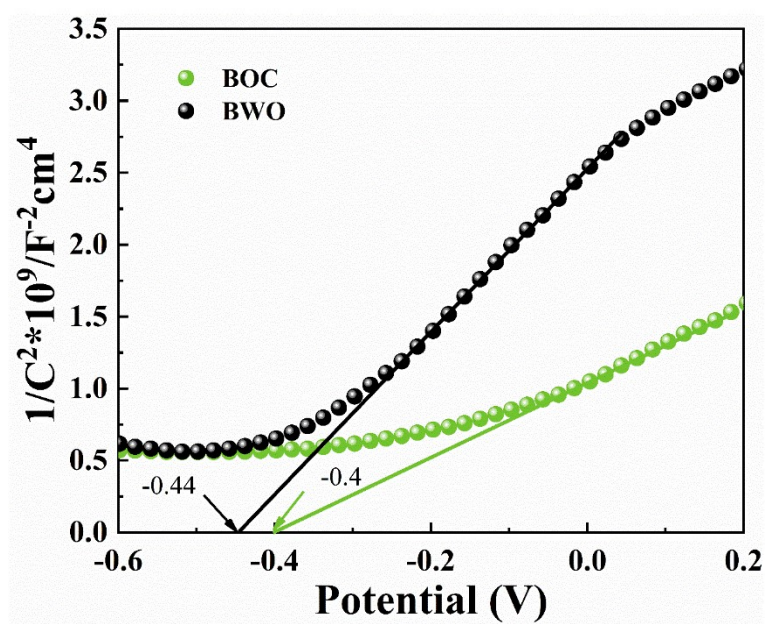


Figure S3. MS of  $\text{Bi}_2\text{WO}_6$  sample and  $\text{BiOCl}$  sample.

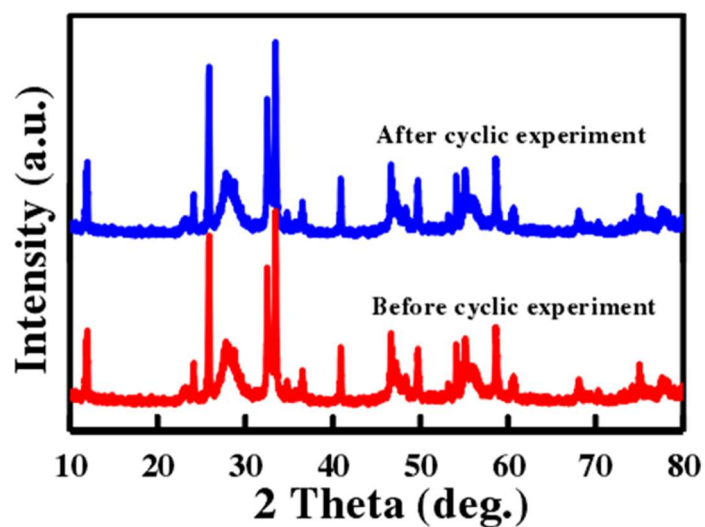


Figure S4. XRD patterns before and after cyclic experiment.

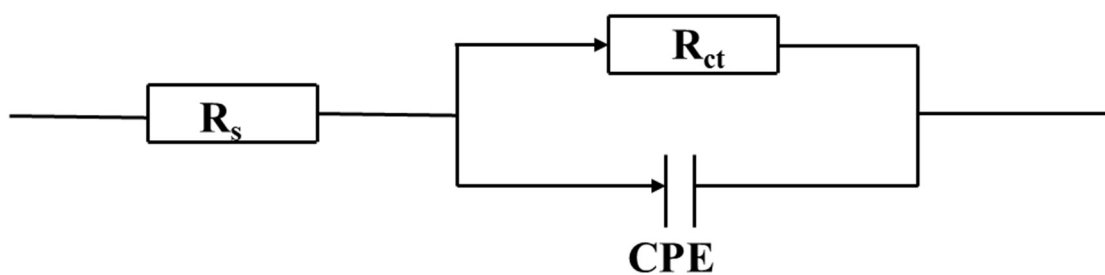


Figure S5. The equivalent circuit diagram of sample.

**Table S1.** EIS fitting data of sample.

Sample	$R_s$ ( $\Omega/\text{cm}^2$ )	$R_{ct}$ ( $\text{K}\Omega/\text{cm}^2$ )	CPE ( $\text{F}/\text{cm}^2$ )
BWO	234	295	$4.57 \times 10^{-5}$
BWOC1	223	245	$3.57 \times 10^{-5}$
BWOC2	197	129	$2.12 \times 10^{-5}$

BWOC3	219	220	$3.23 \times 10^{-5}$
BOC	241	310	$4.62 \times 10^{-5}$

**Table S2.** The corresponding report of Bi<sub>2</sub>WO<sub>6</sub>, BiOCl and composite photocatalysts for RhB degradation

Photocatalysts	RhB (mg/L)	Time (min)	Dosage (ml/mg)	Light Source	Efficiency (%)	Refs.
Ag <sub>2</sub> WO <sub>4</sub> /Bi <sub>2</sub> WO <sub>6</sub>	20	180	30/30	UV filter 500 W Xe-lamp	100 %	[1]
BiOBr/Bi/Bi <sub>2</sub> WO <sub>6</sub>	10	60	50/50	UV filter 350 W Xe-lamp	98.02 %	[2]
CuS/Bi <sub>2</sub> WO <sub>6</sub>	20	70	150/100	UV filter 300 W Xe-lamp	100 %	[3]
La-doped Bi <sub>2</sub> WO <sub>6</sub>	10	120	50/130	UV filter 300 W metal halide lamp	98.2 %	[4]
BiOBr/Bi <sub>2</sub> WO <sub>6</sub>	24	60	150/150	Xe-lamp	97.5 %	[5]
Bi <sub>2</sub> WO <sub>6</sub>	10	100	50/50	Xe-lamp	70 %	[6]
BWOI2	5	20	100/50	50 W LED lamp	100 %	This work

## References

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