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## **SUPPORTING INFORMATION**

## Controlled Synthesis of Thin BiOCl Nanosheets with Exposed {001} Facet and Their Enhanced Photocatalytic Activities

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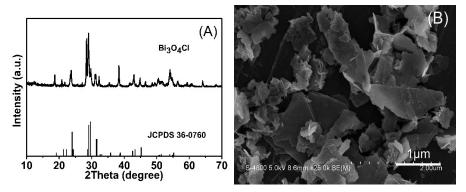
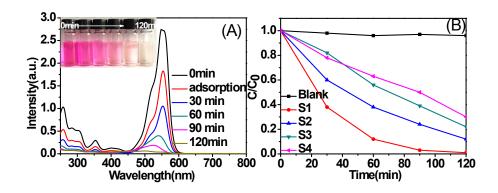


Fig. S1 (A) XRD patterns of Bi<sub>3</sub>O<sub>4</sub>Cl and Standard Card, (B) SEM images of the Bi<sub>3</sub>O<sub>4</sub>Cl.



**Fig. S2** (A) The temporal evolution of the absorption spectra of the RhB solution with S1 sample under visible light irradiation (inset: photographs of degraded RhB solutions at different time intervals). (B) Comparison of photocatalytic performances of S1, S2, S3 and S4 under visible light irradiation.

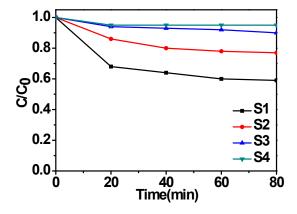
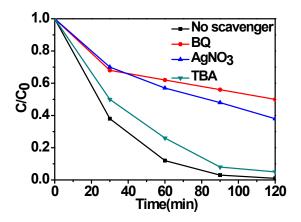


Fig. S3 The adsorption capability of different samples (20 mg) for RhB dye (20 mg/L).



**Fig. S4** Active species trapping experiments during the photocatalytic reaction with 120 min under visible light irradiation using S1 as photocatalyst.

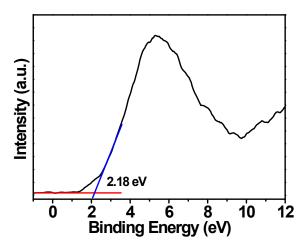
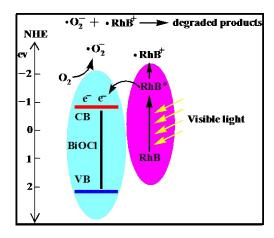
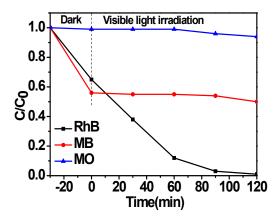


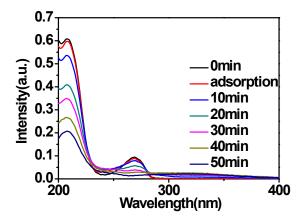
Fig. S5 VB-XPS spectra of S1 sample.



**Fig. S6** Schematic illustration of the photodegradation mechanism of RhB with S1 sample under visible light irradiation.



**Fig. S7** The adsorption capability and photocatalytic performances under visible light irradiation of S1 sample (20 mg) for anonic dye MO, cationic dyes RhB and MB (the concentrations of pollutants are all 20 mg/L).



**Fig. S8** The temporal evolution of the absorption spectra of the phenol solution with S1 sample under UV light irradiation (the concentration of phenol is 10 mg/L).