

# **Controlled growth of BiOCl with large {010} facets for dye self-photosensitization photocatalytic fuel cells application**

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## Figure Caption

**Figure S1** SEM images of RhB/BiOCl: (a) RhB/BiOCl-HNO<sub>3</sub>, and (b) RhB/BiOCl-NH<sub>4</sub>OH.

**Figure S2** Mott-schottky plot of BiOCl-NH<sub>4</sub>OH.

**Figure S3** XRD patterns (a) and XPS spectra (b) of BiOCl-NH<sub>4</sub>OH before and after light irradiation.

**Figure S4** Transient photocurrent responses of BiOCl-001 and BiOCl-NH<sub>4</sub>OH samples in 0.05 M Na<sub>2</sub>SO<sub>4</sub> aqueous solutions under visible light.

**Figure S5** Electrochemical impedance spectroscopy (EIS) of BiOCl samples prepared in different solvent and P25 in DSPFCs.

**Figure S6** J-V and J-JV curves of DSPFCs based on BiOCl-NH<sub>4</sub>OH, BiOCl-001 and P25 photoanodes under visible light irradiation. C<sub>RhB</sub>=10mg/L, 0.05 M Na<sub>2</sub>SO<sub>4</sub> aqueous solutions, pH=2.0.

**Figure S7** Schematic diagram illustrating the process of energy recovery and dye decomposition.

**Figure S8** Color removal efficiency of RhB over BiOCl and P25 photoanodes. C<sub>RhB</sub>=10mg/L, Na<sub>2</sub>SO<sub>4</sub> 0.05 M, pH=2.0.

**Figure S9** Recyclability of BiOCl-NH<sub>4</sub>OH in the photocatalytic fuel cells.

**Figure S1**

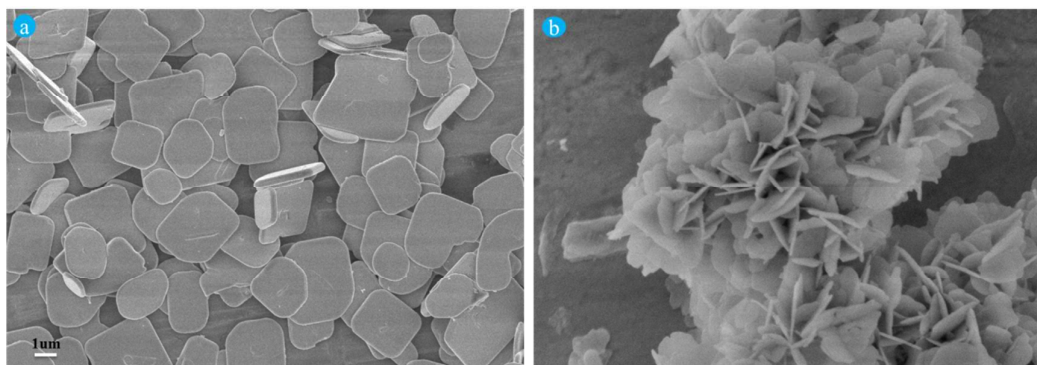
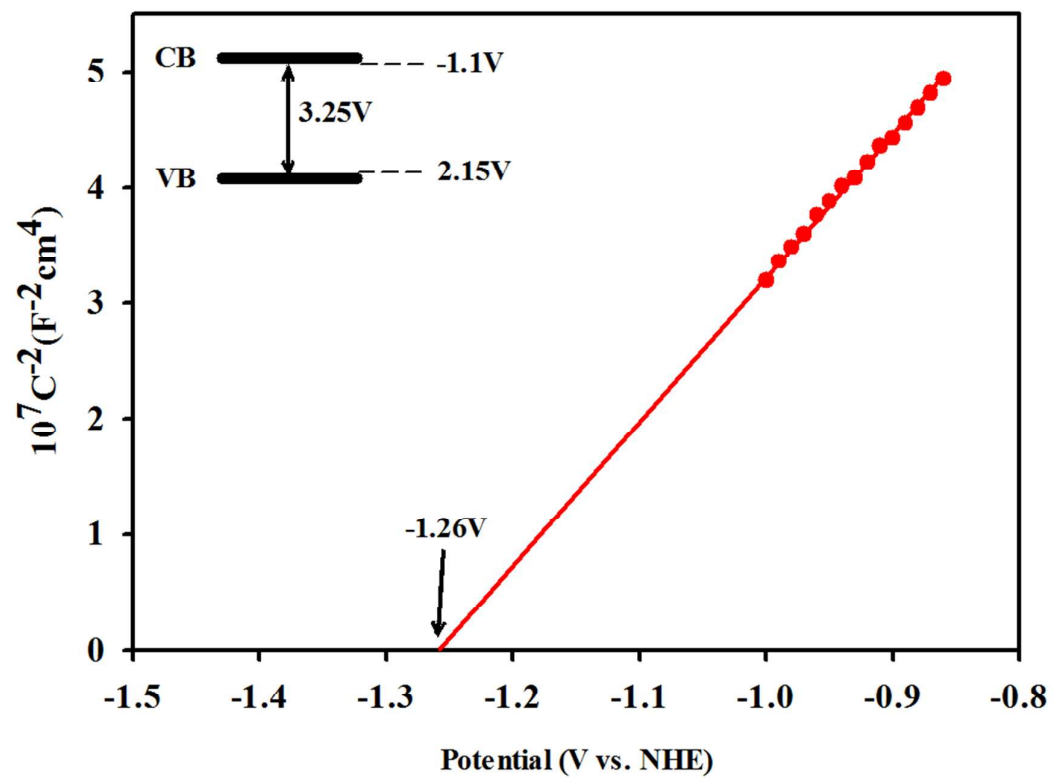


Figure S2



**Figure S3**

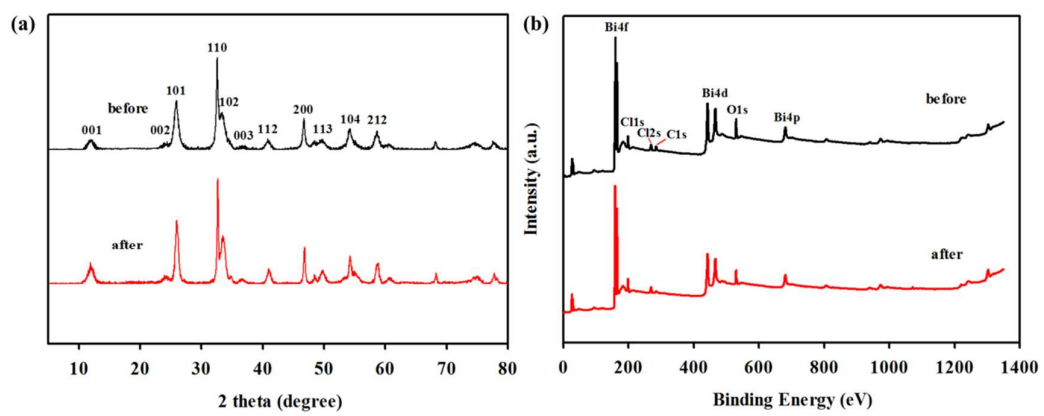


Figure S4

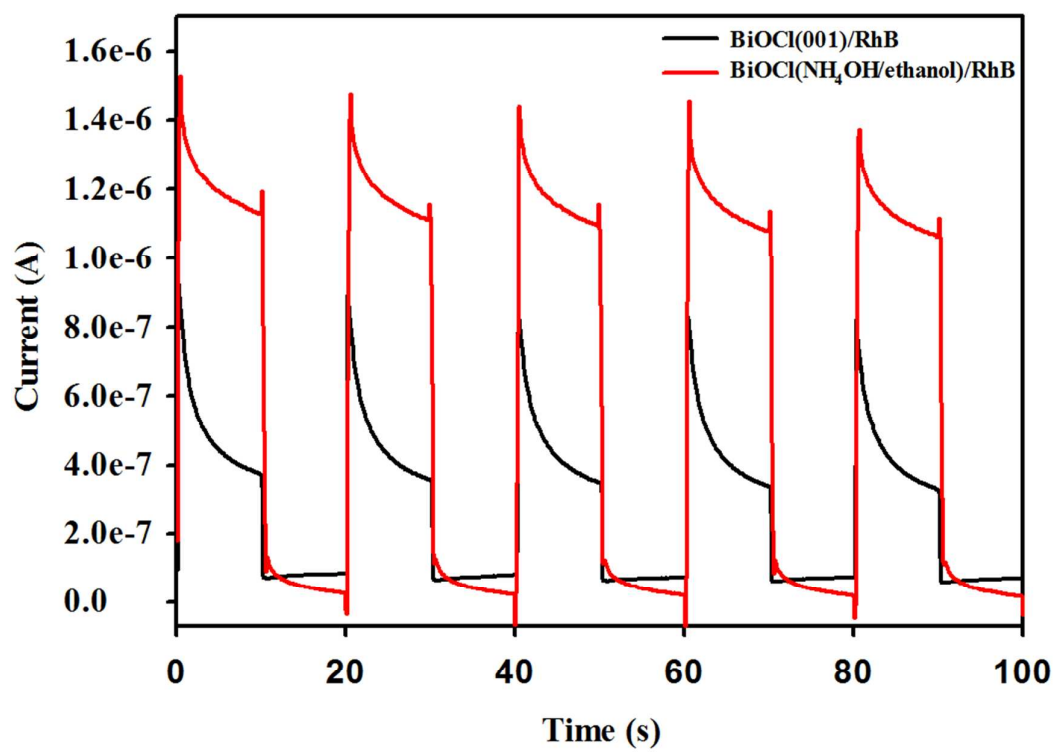


Figure S5

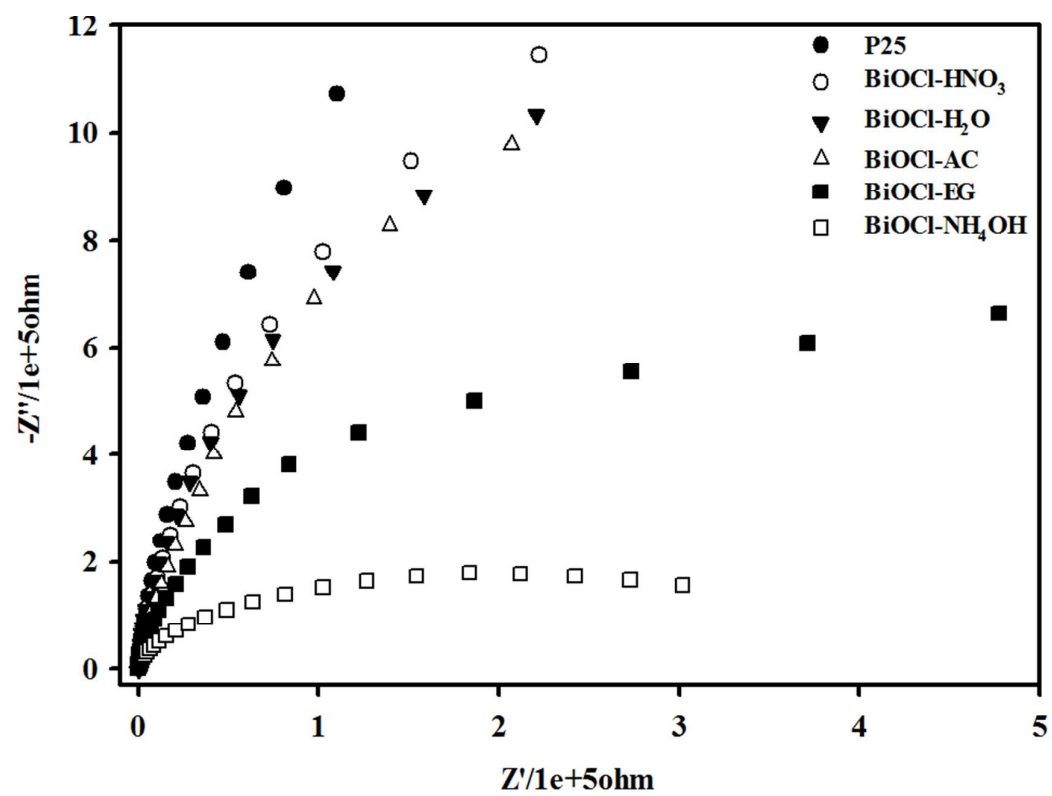


Figure S6

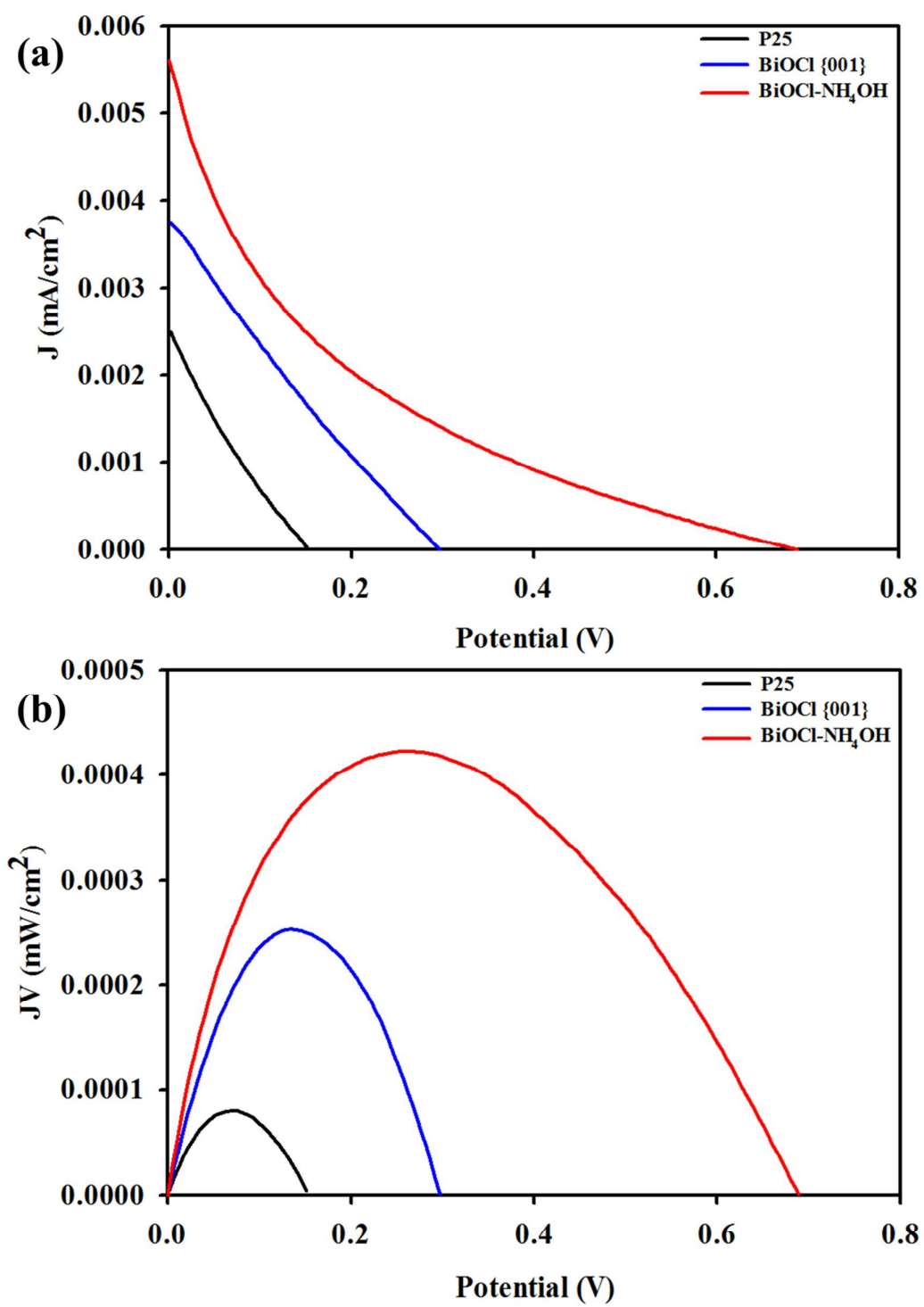




Figure S7

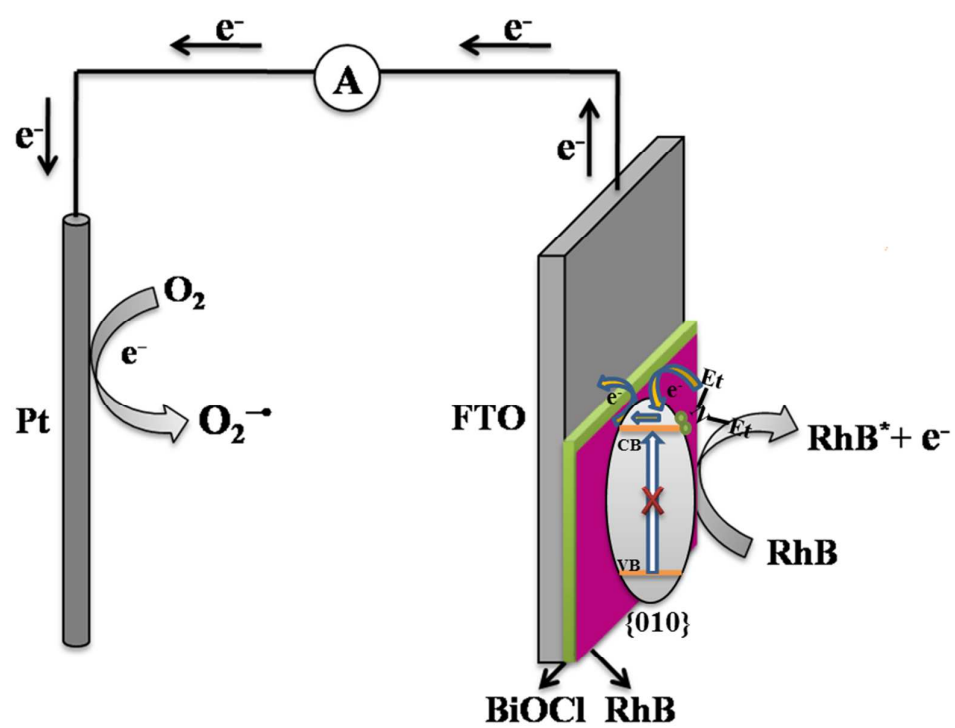


Figure S8

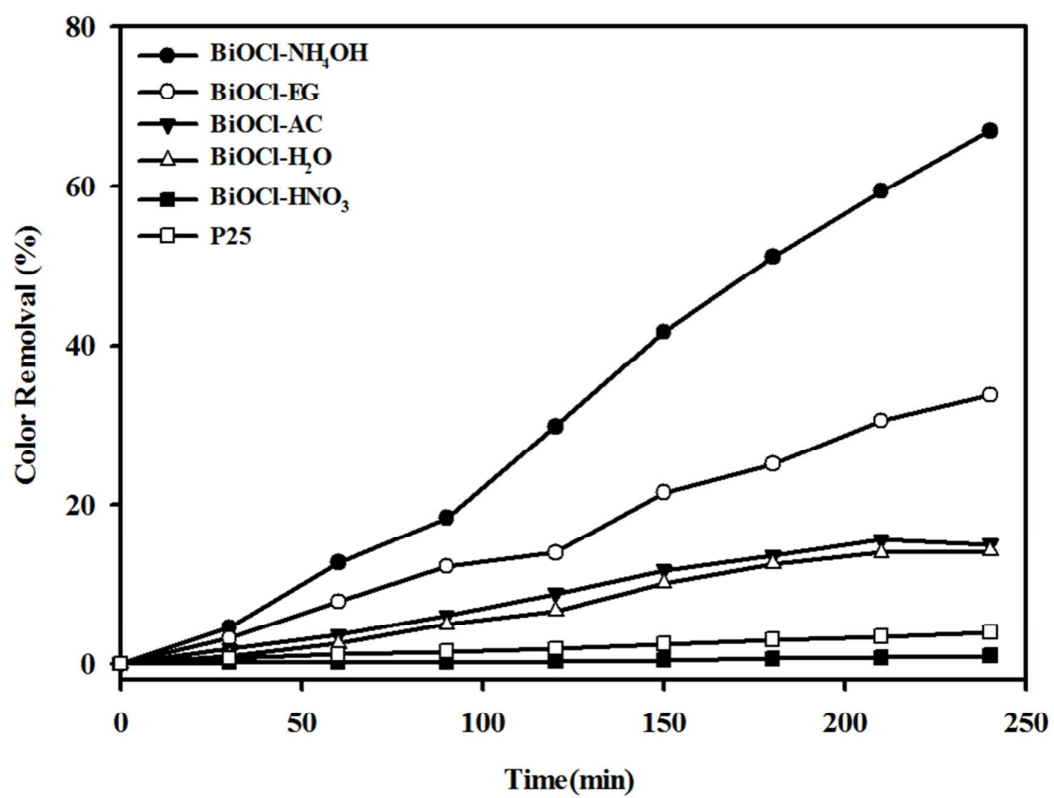


Figure S9

