

Motivating visible light photocatalytic activity of ultrathin $\text{Bi}_2\text{O}_2(\text{OH})_x\text{Cl}_{2-x}$ solid solution with exposed {001} facets by the co-effect of oxygen vacancy and OH replacement

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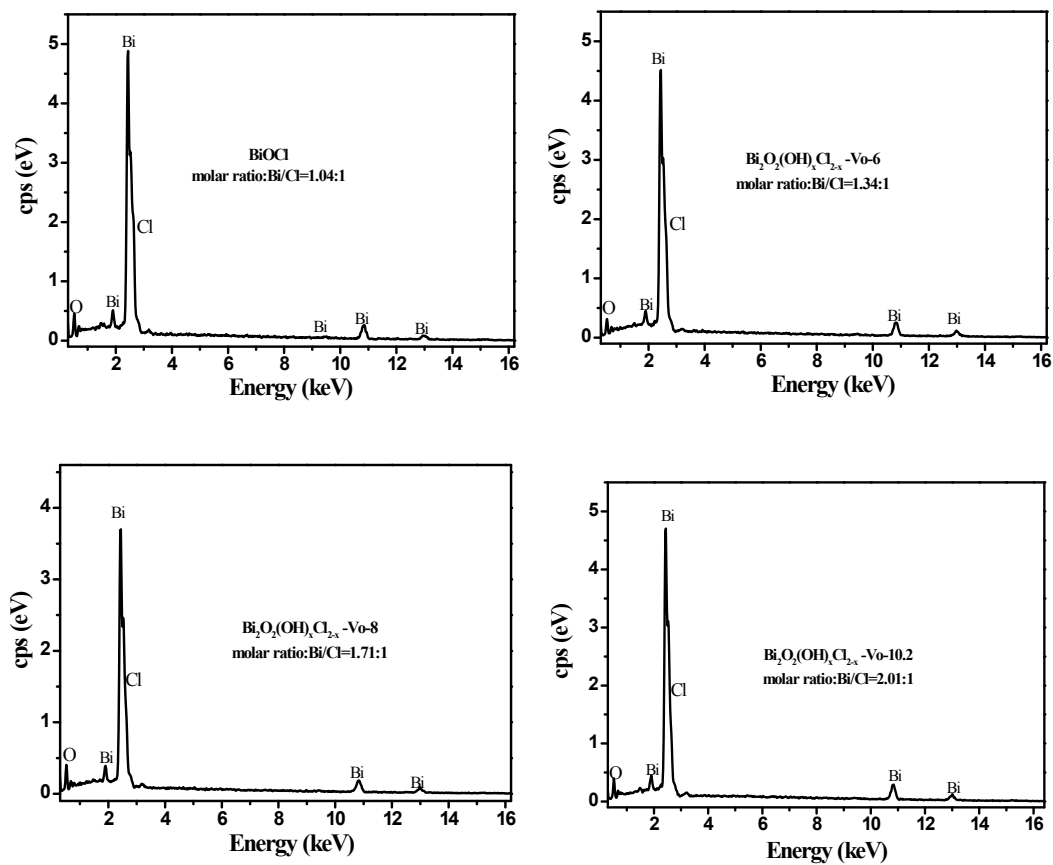


Figure S1. EDS of the samples as a function of pH value in reaction solution.

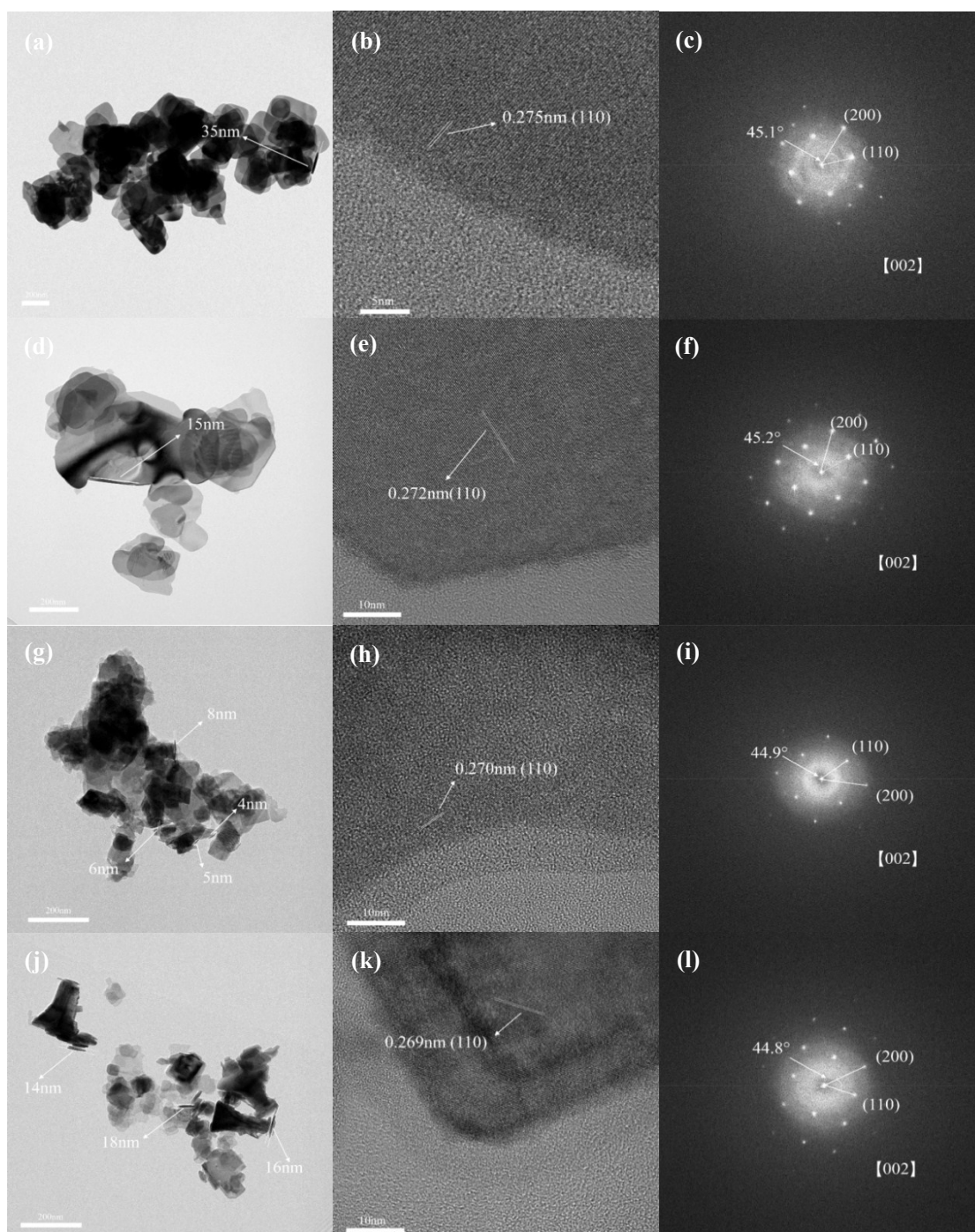


Figure S2. TEM, HRTEM images, SAED patterns of the BiOCl-Vo (a, b, c), $\text{Bi}_2\text{O}_2(\text{OH})_x\text{Cl}_{2-x-6}$ (d, e, f), $\text{Bi}_2\text{O}_2(\text{OH})_x\text{Cl}_{2-x-8}$ (g, h, i), $\text{Bi}_2\text{O}_2(\text{OH})_x\text{Cl}_{2-x-10.2}$ samples (j, k, l), respectively.

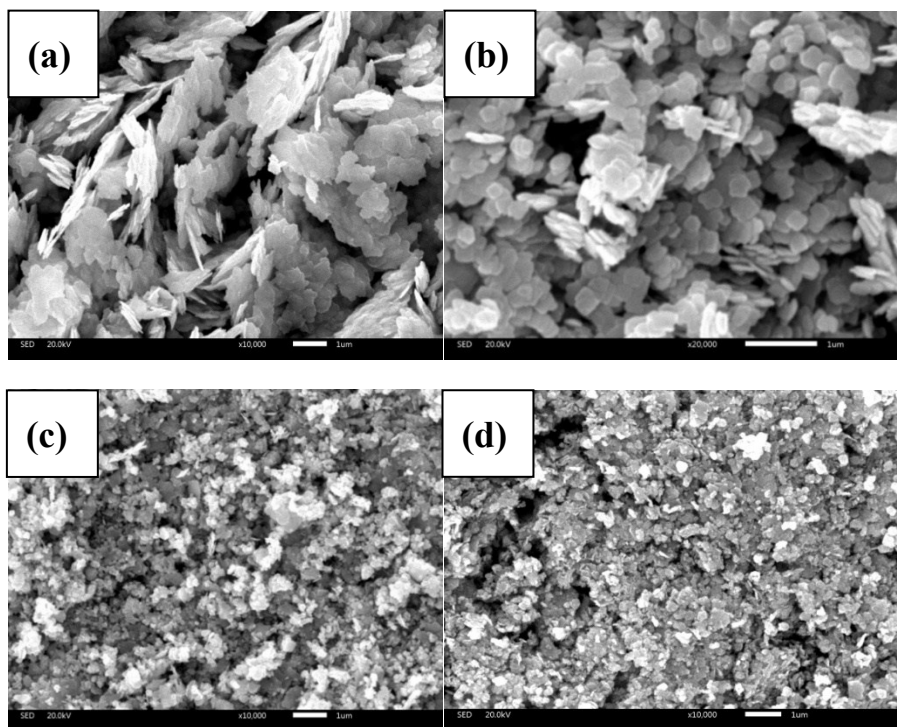


Figure S3. SEM images of BiOCl-Vo (a), $\text{Bi}_2\text{O}_2(\text{OH})_x\text{Cl}_{2-x}-6$ (b), $\text{Bi}_2\text{O}_2(\text{OH})_x\text{Cl}_{2-x}-8$ (c) and $\text{Bi}_2\text{O}_2(\text{OH})_x\text{Cl}_{2-x}-10.2$ (d).

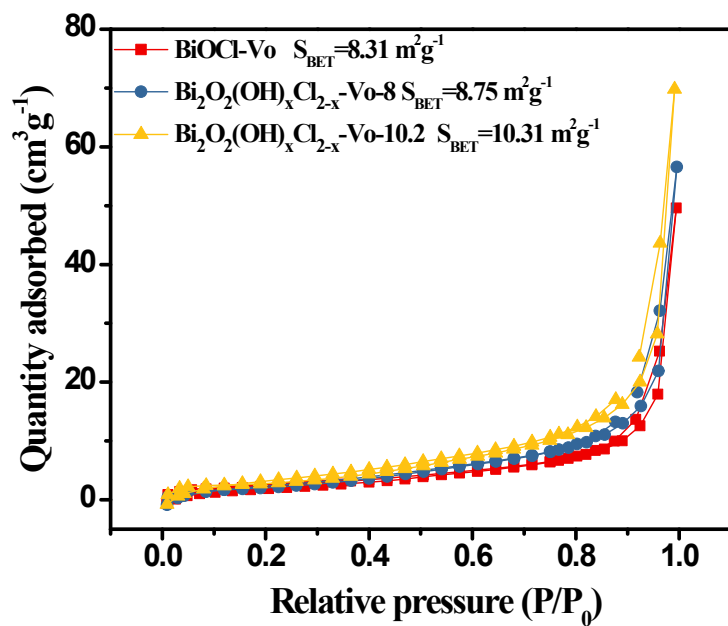


Figure S4. N_2 adsorption–desorption isotherms of the samples.

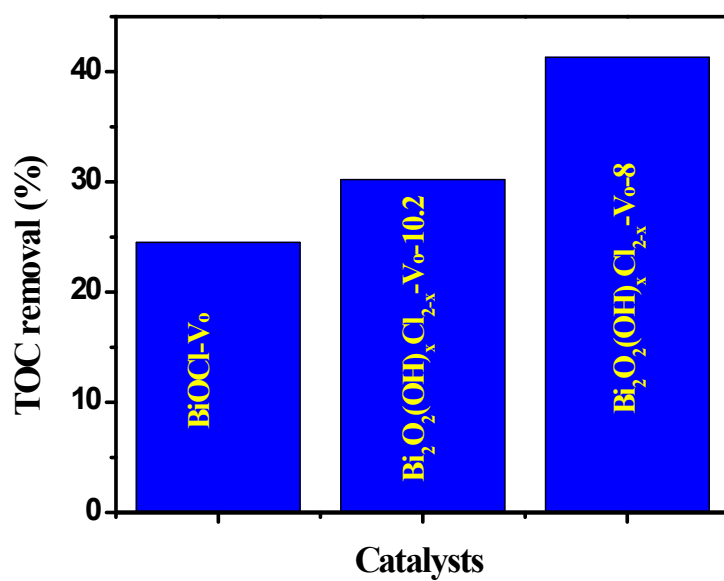


Figure S5. TOC removal ability of the samples for CIP solution after 2.5 h photocatalytic oxidation.

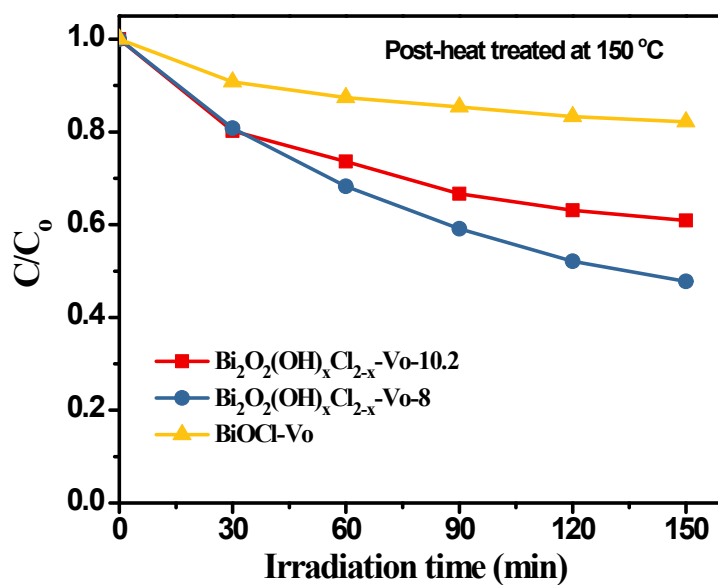


Figure S6. Photocatalytic activity of the samples after post-heat treated at 150 °C for 1 h.

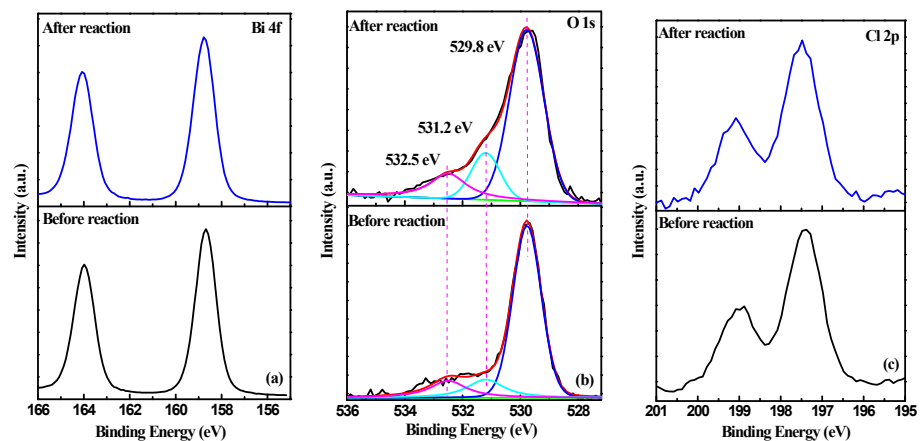


Figure S7. XPS spectra of $\text{Bi}_2\text{O}_2(\text{OH})_x\text{Cl}_{2-x}$ -8 before and after photocatalytic reaction.

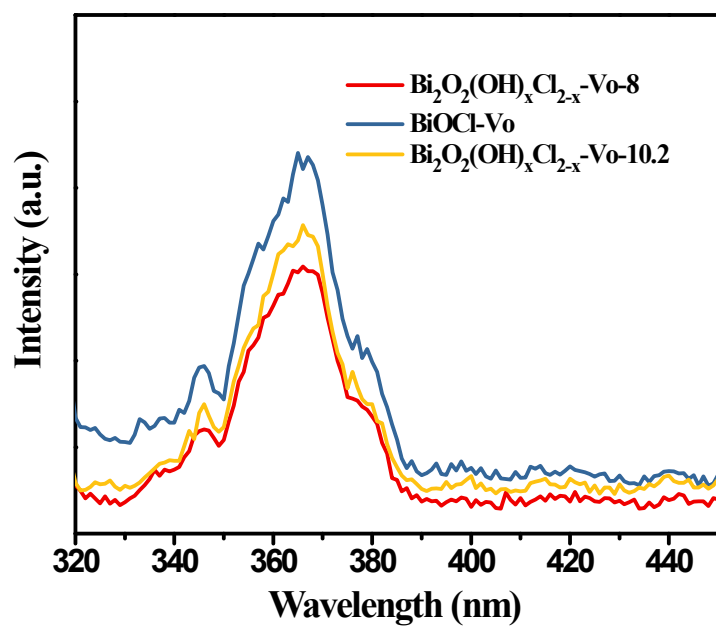


Figure S8. PL spectra of the samples with the excitation wavelength of 330 nm.