

Supplementary Information for

Pt Quantum Dots Deposited on N-Doped (BiO)₂CO₃: Enhanced Visible Light Photocatalytic NO Removal and Reaction Pathway

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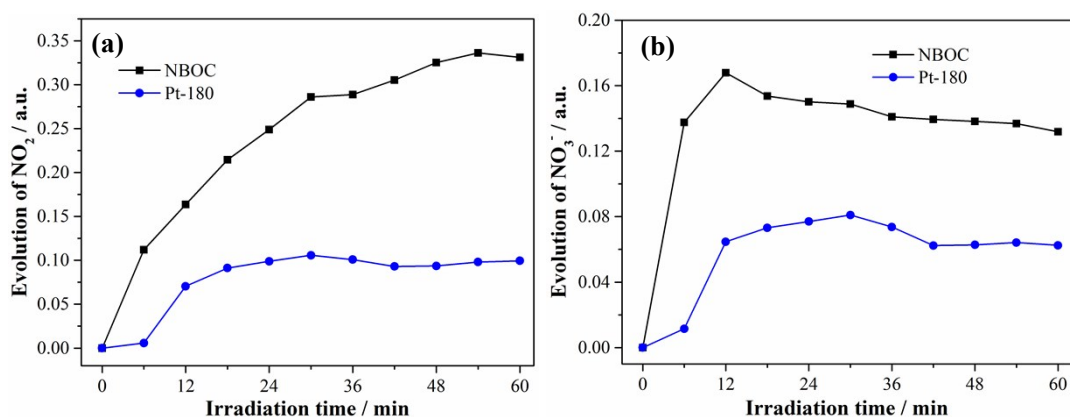


Fig. S1 Evolution of NO₂ (a) and nitrates (b) on the catalyst (The data were derived from Fig. 9).

Photocatalytic decomposition of phenol. Fifty milligrams of the photocatalyst were ultrasonically dispersed in 50 mL of the phenol aqueous solution (10 mg/L). Before light irradiation, the suspension was magnetically stirred in darkness for 1 h to achieve an absorption-desorption equilibrium. Afterward, the light (500 W xenon lamp, $\lambda > 420$ nm) was turned on. At certain time interval, 3 mL of the suspension was sampled and centrifuged to get rid of the solid particles. Finally, the concentration of phenol was determined by colorimetry on a UV-5500PC UV-vis spectrophotometer. The concentration of phenol was analyzed by recording the absorbance at the characteristic band of 270 nm using a Cary 5000 UV-vis spectrophotometer.

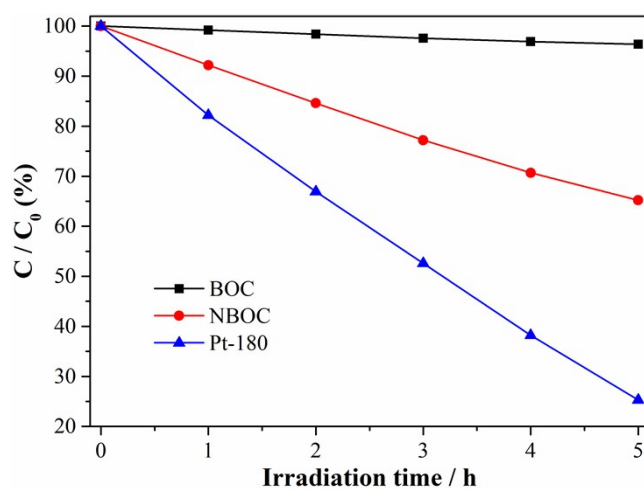


Fig. S2 Photocatalytic degradation curves of phenol over BOC, NBOC and Pt-180 under visible light irradiation.

The degradation curves of phenol are shown in Fig. S2. The pure BOC exhibits a little photodegradation efficiency under visible light ($\lambda > 420$ nm). Comparatively, the NBOC showed improved photocatalytic performance with a removal ratio of 34.8% due to the N doping. Specifically, Pt-180 exhibits further enhanced photocatalytic activity, in which the phenol removal ratio reaches 74.7% with irradiation of visible light for 5 h.