

Supplementary information

Defect-Engineering of Pt/Bi₄NbO₈Br Heterostructures for Synergetic Promotional Photocatalytic Removal of Versatile Organic Contaminants

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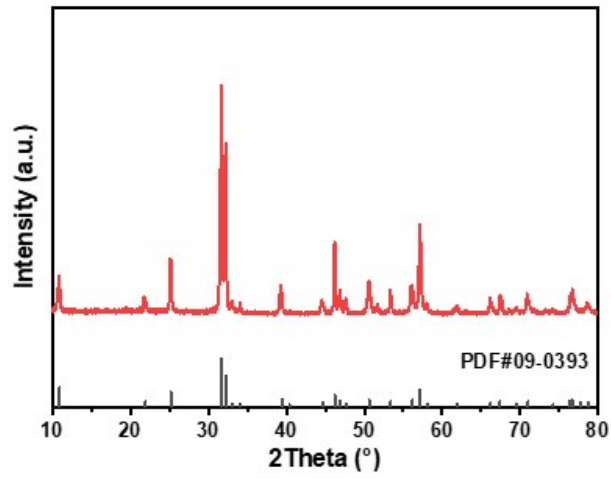


Figure S1 XRD patterns of as-prepared BiOBr.

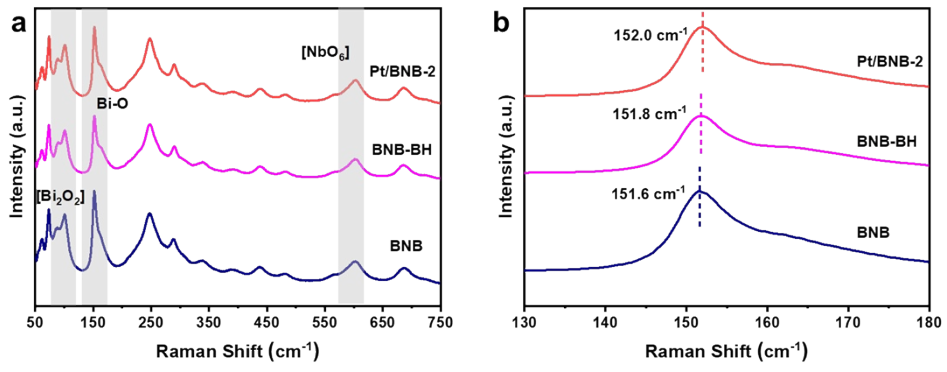


Figure S2 Raman spectra of BNB, BNB-BH and Pt/BNB-2.

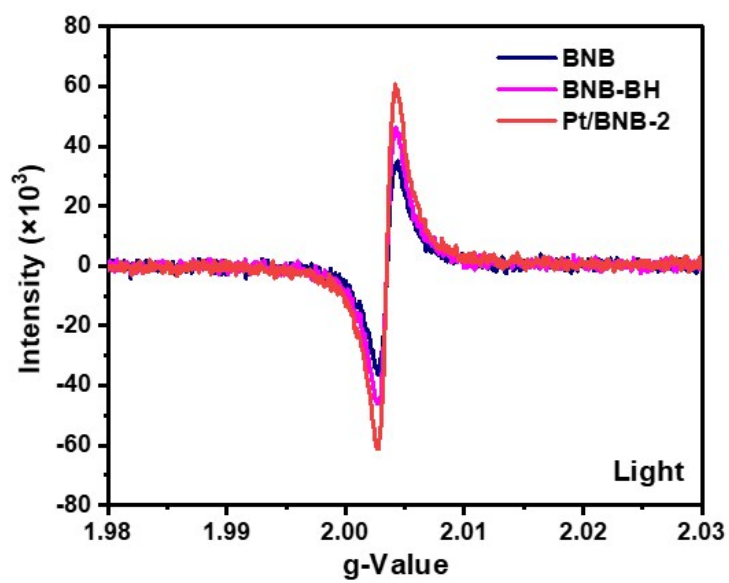


Figure S3 ESR of BNB, BNB-BH and Pt/BNB-2 under visible-light illumination.

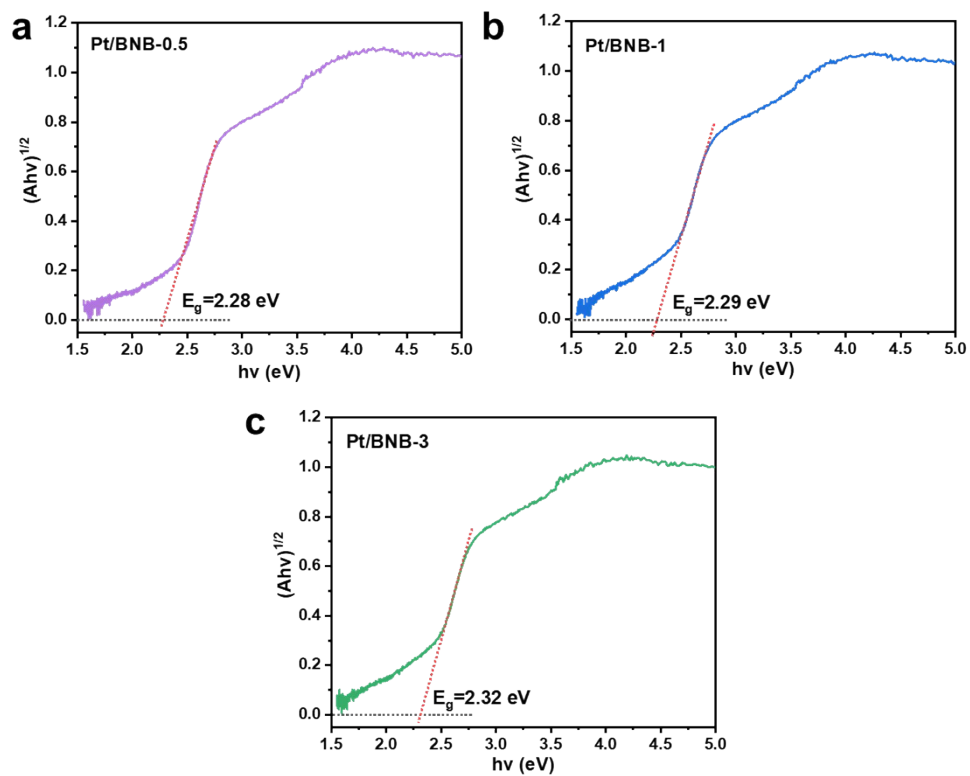


Figure S4 Tauc plots for the Pt/BNB-0.5, Pt/BNB-1 and Pt/BNB-3 to evaluate band-gap energies.

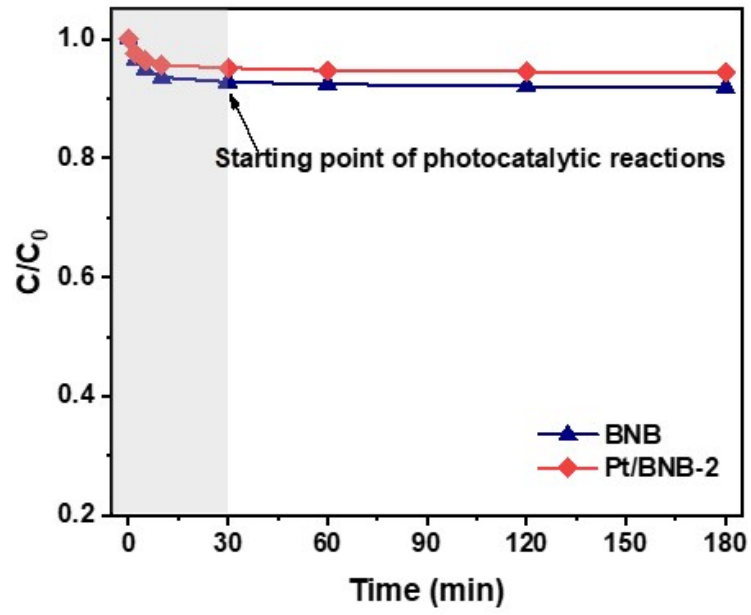


Figure S5 Adsorption plots for the BNB and Pt/BNB-2 towards MO molecules. $[MO]_0=15$ mg/L,
[Cat.] = 1 g/L.

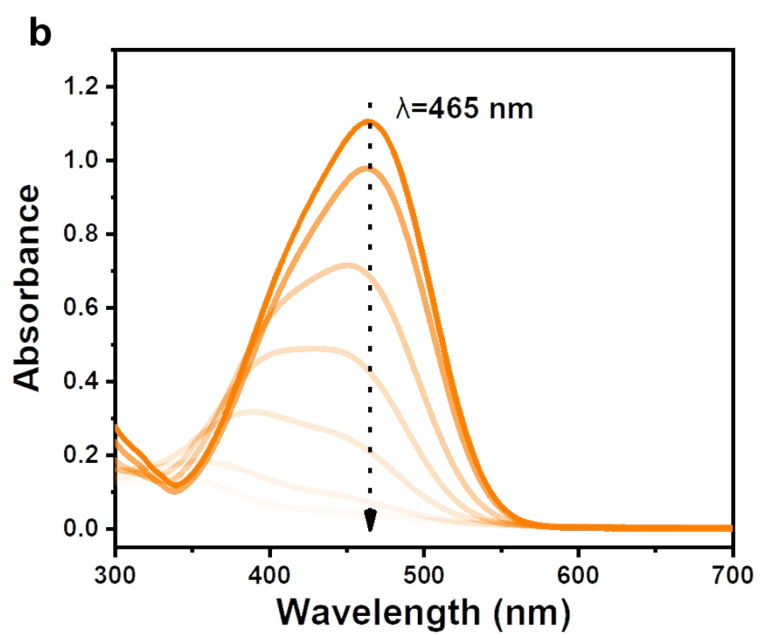
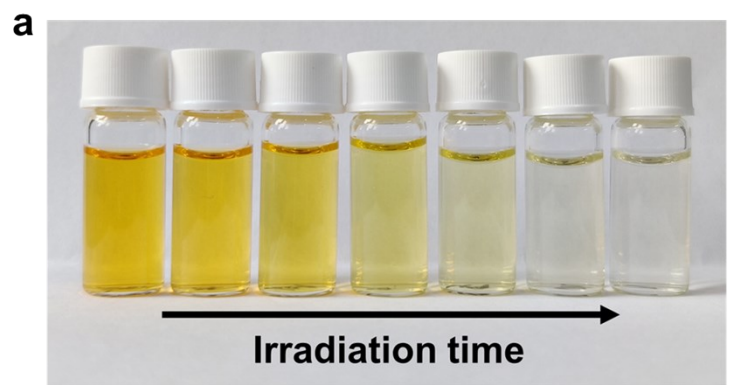


Figure S6 (a) Digital graphs and (b) corresponding UV-vis absorption plots for the degradation process of MO solution.

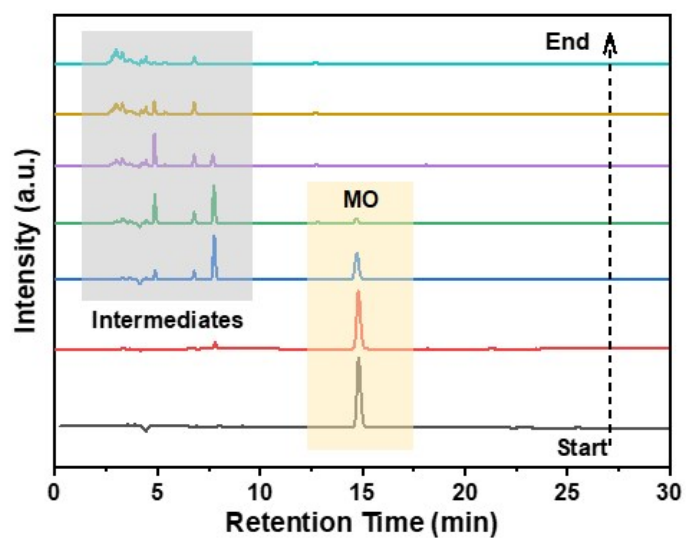


Figure S7 HPLC analysis for the products in the photocatalytic reactions of MO degradation.

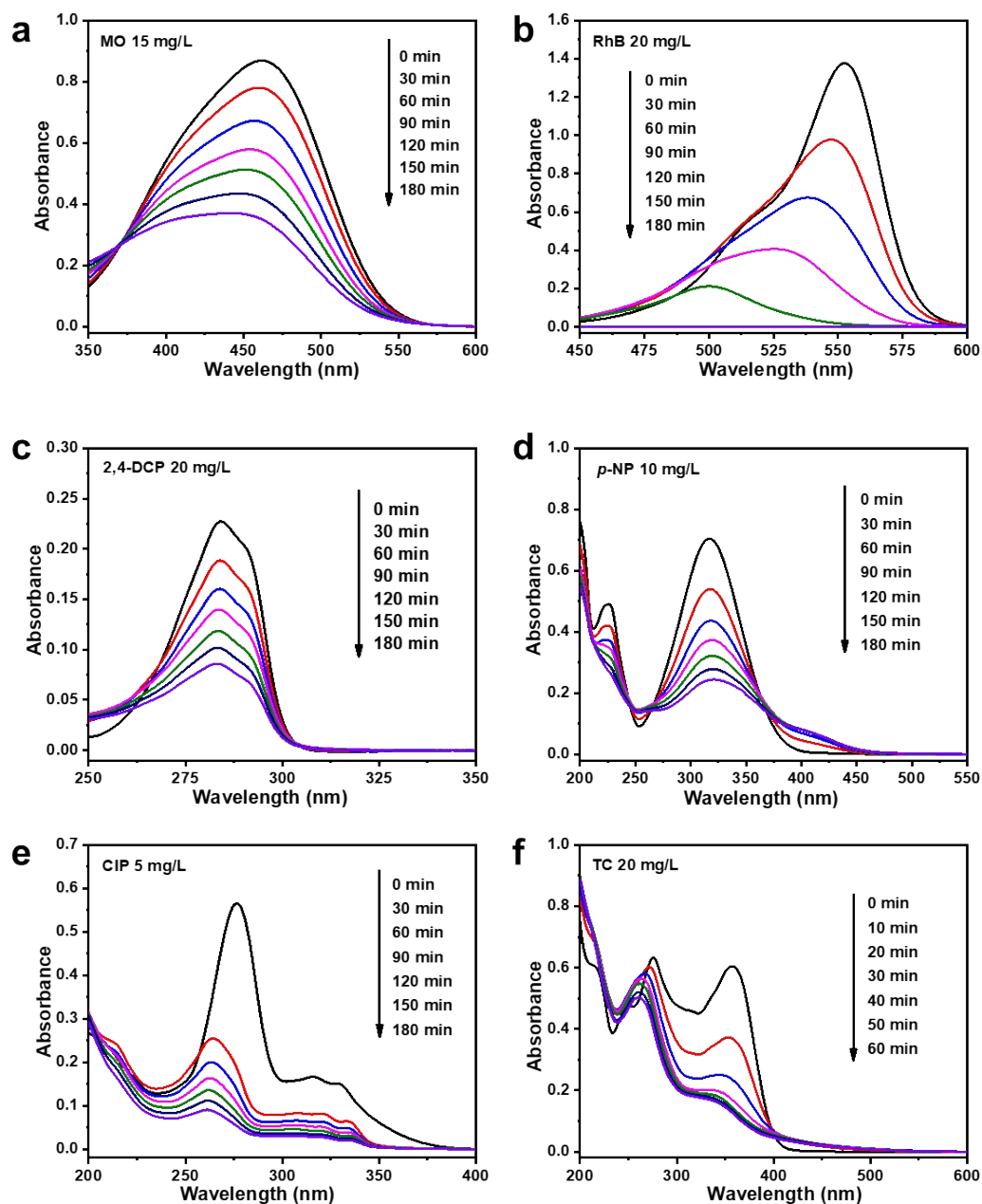


Figure S8 Plots of photocatalytic removal for various organic pollutants by Pt/BNB-2 (a) methyl orange (b) rhodamine B (c) 2,4-dichlorophenol (d) *p*-nitrophenol (e) ciprofloxacin and (f) tetracycline hydrochloride.

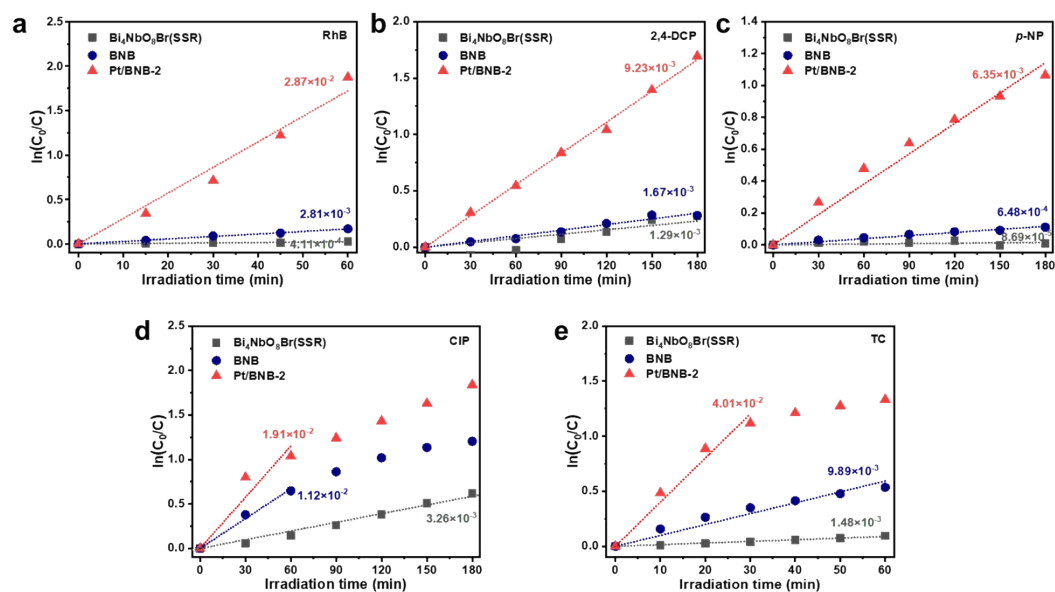


Figure S9 Pseudo-first-order kinetic fitting plots of photocatalytic removal for organic pollutants by $\text{Bi}_4\text{NbO}_8\text{Br}$ (SSR), BNB and Pt/BNB-2 (a) RhB (b) 2,4-DCP (c) p-NP (d) CIP and (e) TC.

**Fractional data were adopted for the pseudo-first-order kinetic fitting for the (d) CIP and (e) TC, as Pt/BNB-2 possessed exceptional degradation rate than the others.*