

## Robust Photocatalytic Activity of Two-dimensional h-BN/Bi<sub>2</sub>O<sub>3</sub> Quantum Sheets Heterostructure

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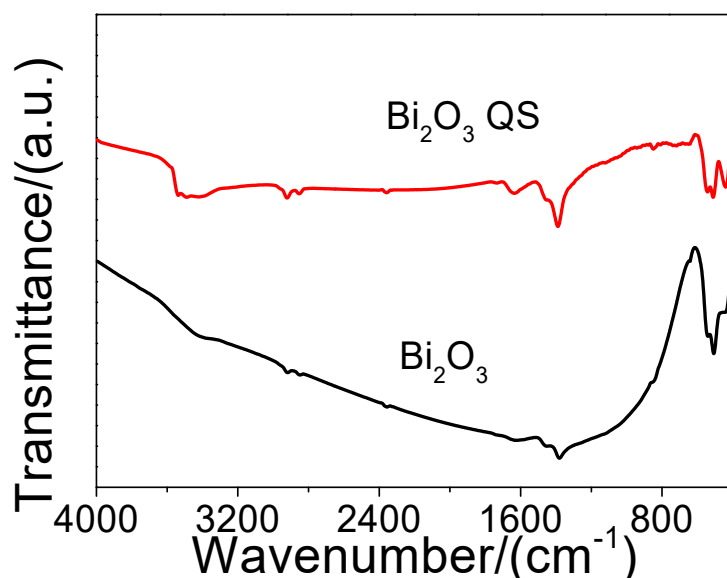


Figure S1 FT-IR spectra of raw Bi<sub>2</sub>O<sub>3</sub> and the obtained Bi<sub>2</sub>O<sub>3</sub> QS materials

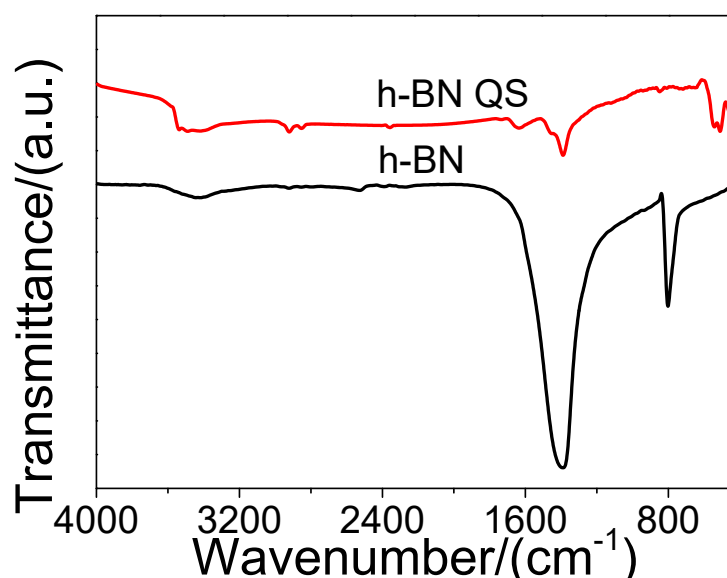


Figure S2 FT-IR spectra of raw h-BN and the obtained h-BN QS materials

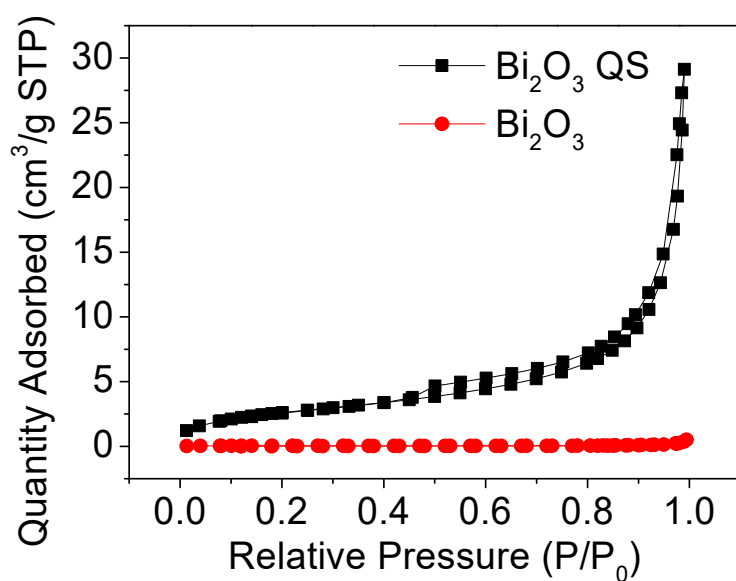


Figure S3 Nitrogen adsorption–desorption isotherms of  $\text{Bi}_2\text{O}_3$  and  $\text{Bi}_2\text{O}_3$  QS  
 ( $\text{Bi}_2\text{O}_3$   $S_{\text{BET}}=0.1367$   $\text{m}^2/\text{g}$ , Pore average size=23.6857 nm, Pore volume=0.000559  $\text{cm}^3/\text{g}$ ,  $\text{Bi}_2\text{O}_3$   
 QS  $S_{\text{BET}}=9.7916$   $\text{m}^2/\text{g}$ , Pore average size=17.3700 nm, Pore volume=0.045382  $\text{cm}^3/\text{g}$ )

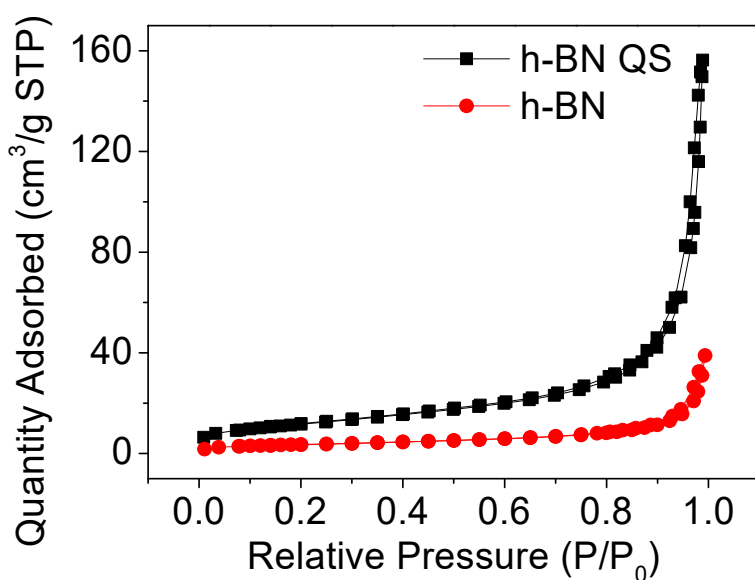


Figure S4 Nitrogen adsorption–desorption isotherms of h-BN and h-BN QS  
 (h-BN  $S_{\text{BET}}=12.9337$   $\text{m}^2/\text{g}$ , Pore average size=21.2712 nm, Pore volume=0.05944  $\text{cm}^3/\text{g}$ , h-BN  
 QS  $S_{\text{BET}}=41.3281$   $\text{m}^2/\text{g}$ , Pore average size=23.2663 nm, Pore volume=0.240388  $\text{cm}^3/\text{g}$ )

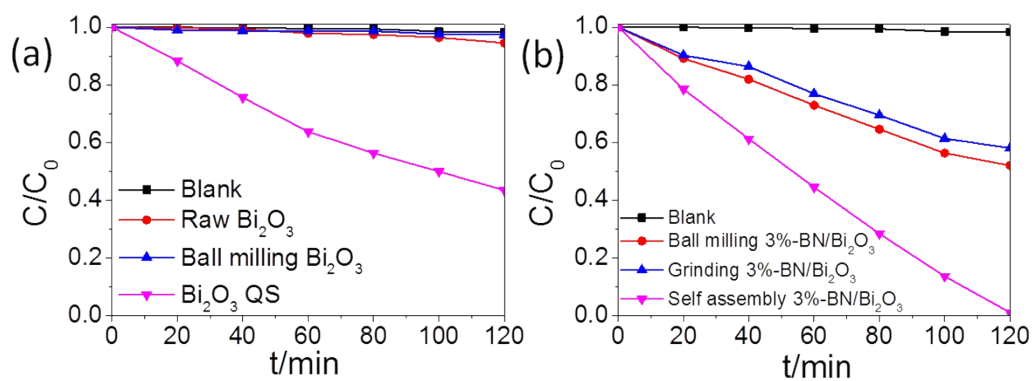


Figure S5 Correlation between preparation method and catalytic activity  
 (a) Pure  $\text{Bi}_2\text{O}_3$  samples and (b)  $\text{BN}/\text{Bi}_2\text{O}_3$  composites under visible-light irradiation ( $\lambda > 420 \text{ nm}$ )

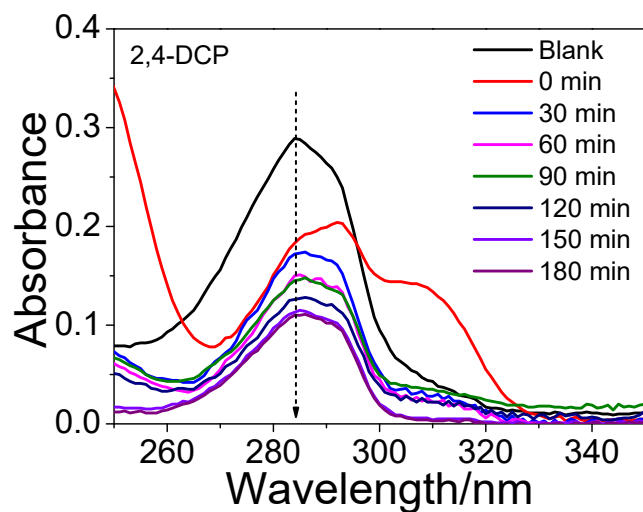


Figure S6 UV absorption spectra of 2, 4-dichlorophenol (2,4-DCP) solution over 3wt%- $\text{BN}/\text{Bi}_2\text{O}_3$  after visible light irradiation for different time periods

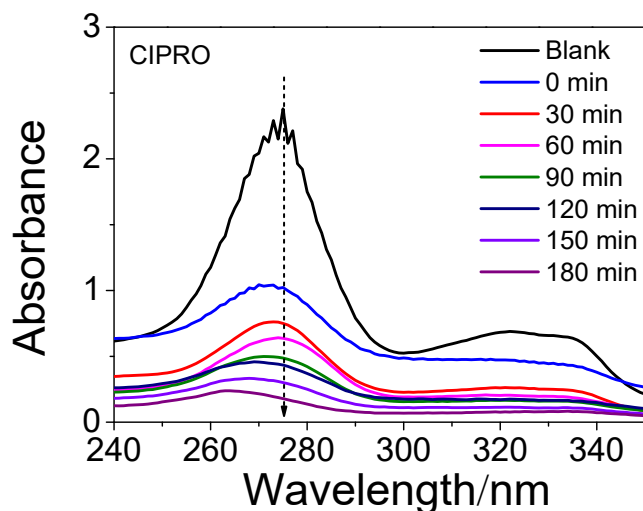


Figure S7 UV absorption spectra of ciprofloxacin hydrochloride (CIPRO) solution over 3wt%- $\text{BN}/\text{Bi}_2\text{O}_3$  after visible light irradiation for different time periods