Support Information

Fabrication of g-C_3N_4/Bi_2WO_6 as direct Z-scheme excellent photocatalyst

Ping Zhao, Bo Jin*, Qingchun Zhang, Rufang Peng*
State Key Laboratory of Environment-friendly Energy Materials,
School of Materials Science and Engineering,
Southwest University of Science and Technology, Mianyang 621010, Sichuan, P. R. China.
Correspondence: jinbo0428@163.com; rfpeng2006@163.com

1. Sample preparation

Synthesis of CNQDs: Briefly, urea and sodium citrate (18:1) were dissolved in 1.5 mL of deionized water, and kept it at 180 ℃ for 3 h. The product was purified with a 0.22 μm filter membrane to remove the insoluble precipitate, and further diluted to 50 mL to prepare CNQDs suspensions (5.0 mg mL^{-1}).

Synthesis of CNNS: The bulk g-C_3N_4 was received by heating urea at 550 ℃ for 4 h. Then, 4 g of bulk g-C_3N_4 was dispersed in 200 mL water and exfoliated by ultrasonication for 2 h. The suspension was centrifuged at 3000 rpm to remove the residual unexfoliated g-C_3N_4 particles, and ultrasound again. The final product was obtained after the suspension was centrifuged at 10000 rpm, lyophilized, and noted as CNNS.

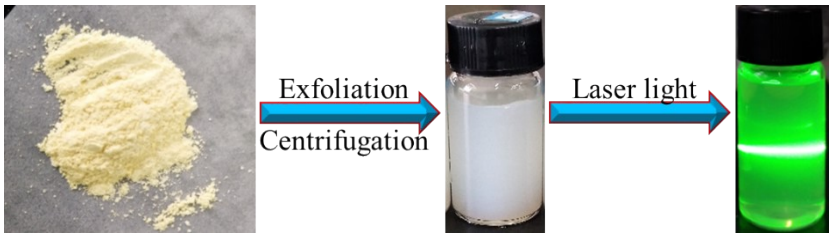

Fig. S1 Photograph of bulk g-C_3N_4 and suspension of ultrathin g-C_3N_4 nanosheets

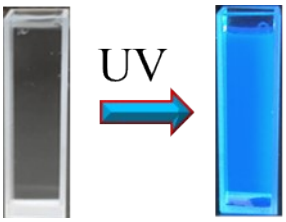

Fig. S2 Photos of CNQDs solution under sunlight (left) and irradiation by a 365 nm UV beam (right).

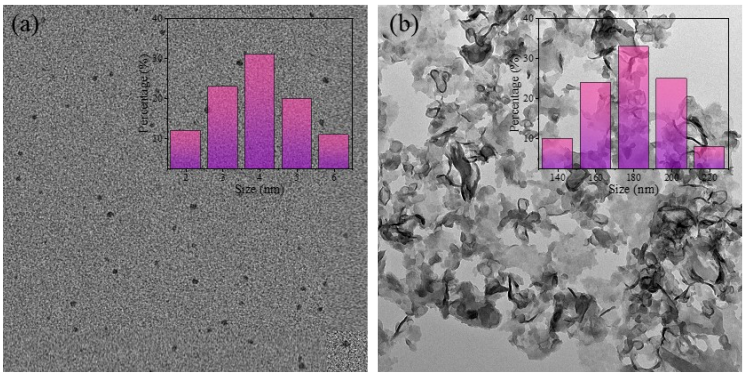

Fig. S3 TEM images of the as-prepared (a) CNQDs and (b) CNNS. Inset: the corresponding size distribution.

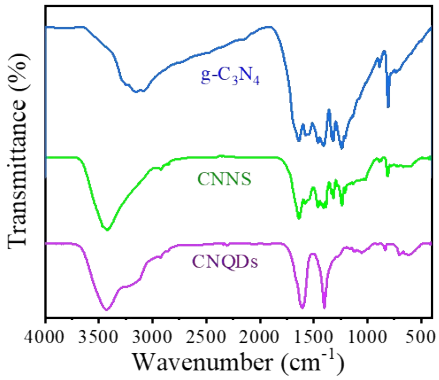

Fig. S4 FT-IR spectra for as-prepared g-C_3N_4, CNNS and CNQDs

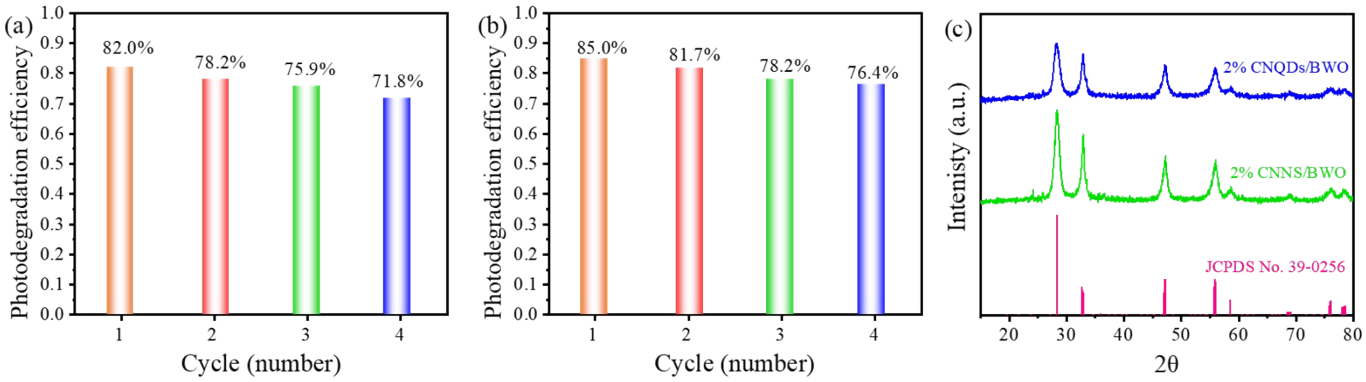

Fig. S5 Four continuous cycle experiments of (a) 2% CNQDs/BWO, and (b) 2% CNNS/BWO for CIP degradation under the same conditions; (c) the XRD pattern of as-prepared samples before and after photocatalytic experiment

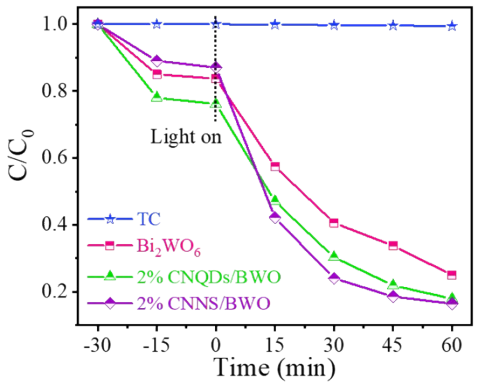

Fig. S6 Photocatalytic degradation of TC of as-prepared photocatalysts.

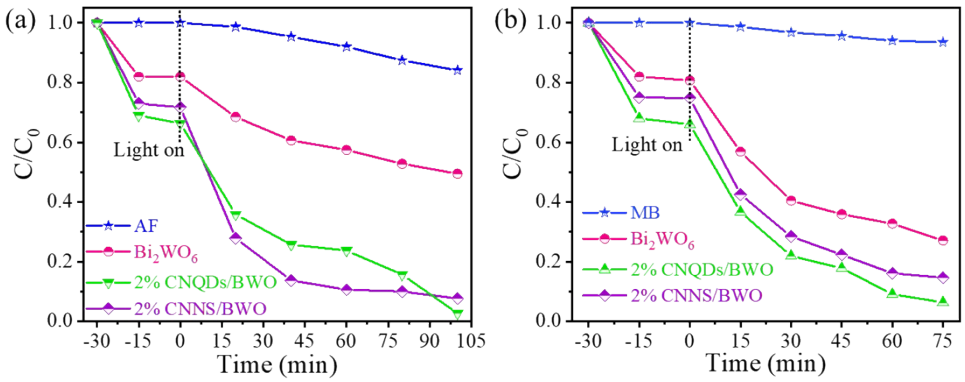

Fig. S7 Photocatalytic degradation of (a) AF and (b) MB of as-prepared photocatalysts.

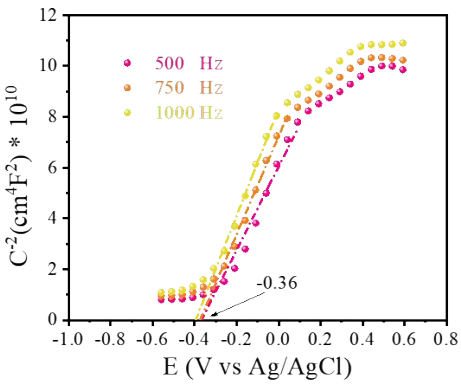

Fig. S8 Mott-Schottky tests of Bi_2WO_6