Support Information

Fabrication of g-C$_3$N$_4$/Bi$_2$WO$_6$ as direct Z-scheme excellent photocatalyst

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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 °C 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$_3$N$_4$ was received by heating urea at 550 °C for 4 h. Then, 4 g of bulk g-C$_3$N$_4$ 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$_3$N$_4$ 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$_3$N$_4$ and suspension of ultrathin g-C$_3$N$_4$ 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$_3$N$_4$, 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$_2$WO$_6$