## Enhanced oxidative degradation of tetracycline by visible light-promoted g- $C_3N_4$ modified $Cu_3(OH)_4SO_4/Cu_7S_4$ composites under air atmosphere

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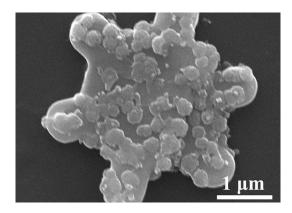


Fig. S1 SEM image of CS.

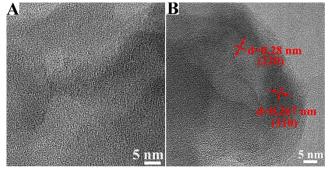


Fig. S2 HRTEM images of (A)  $g-C_3N_4$  and (B) CSG (4:1).

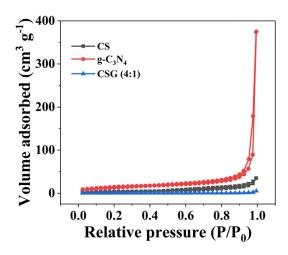


Fig. S3  $N_2$  adsorption-desorption isotherms of CS, g-C<sub>3</sub>N<sub>4</sub> and CSG (4:1) heterojunctions.

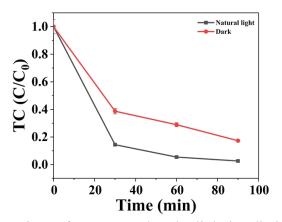


Fig. S4 Comparison of TC removal under light irradiation and dark.

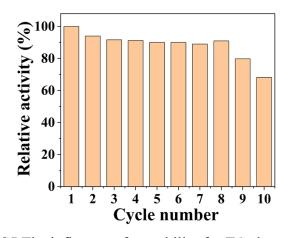


Fig. S5 The influence of reusability for TC abatement.

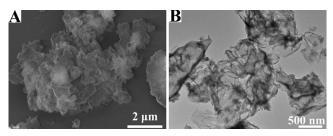
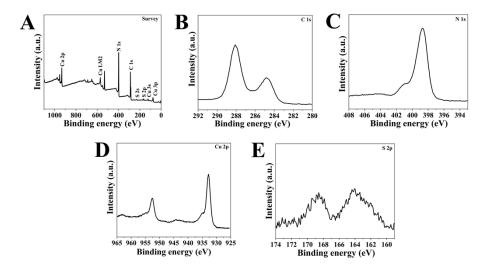


Fig. S6 (A) SEM and (B) TEM iamges of CSG (4:1) after the reaction.



**Fig. S7** XPS spectra of CSG (4:1) after the reaction: (A) the survey, the high-resolution spectra of (B) C 1s, (C) N 1s, (D) Cu 2p and (E) S 2p.

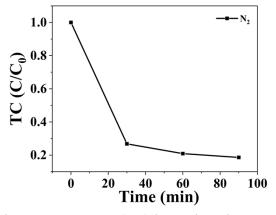


Fig. S8 TC removal curve over CSG (4:1) heterojunctions under  $N_2$  atmosphere.

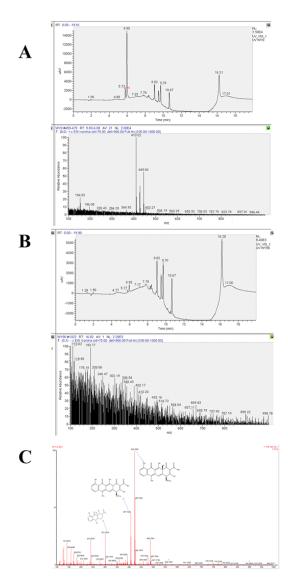
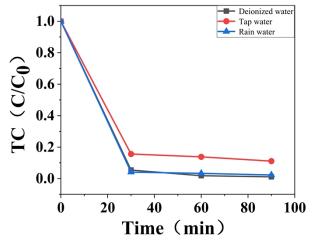


Fig. S9 LC-MS of (A) TC and (B) TC degradation. (C) ESI-MS of TC degradation.



**Fig. S10** The effects of water quality on the removal efficiency of TC over CSG (4:1) heterojunctions.