Electronic Supplementary Material (ESI) for RSC Advances.

Facile synthesis of sheet-like N-TiO_2/g-C_3N_4 heterojunctions with highly enhanced and stable visible-light photocatalytic activities

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Figure S1. FT-IR spectra (a) and XRD patterns (b) of p-g-C_3N_4 and g-C_3N_4.

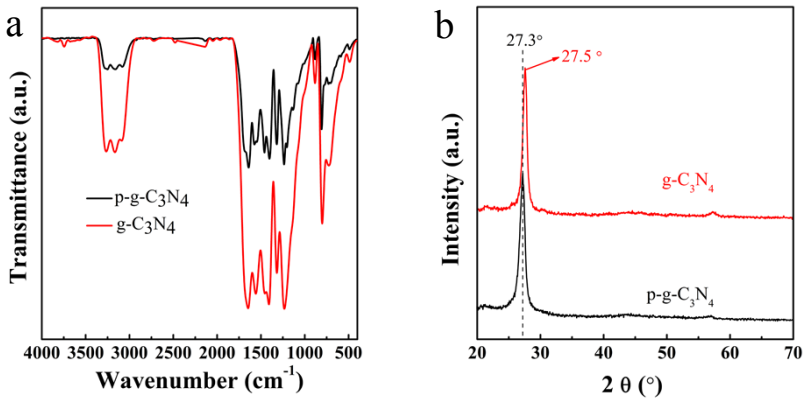
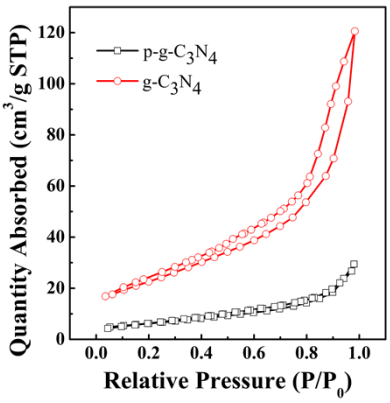


Figure S2. N_2 adsorption-desorption isotherm of bulk p-g-C_3N_4 and g-C_3N_4 nanosheets.



Scheme S1. Proposed self-polymerization of NH_4SCN to carbon nitride network under oxygen lack (a) and oxygen enrichment (b) conditions.

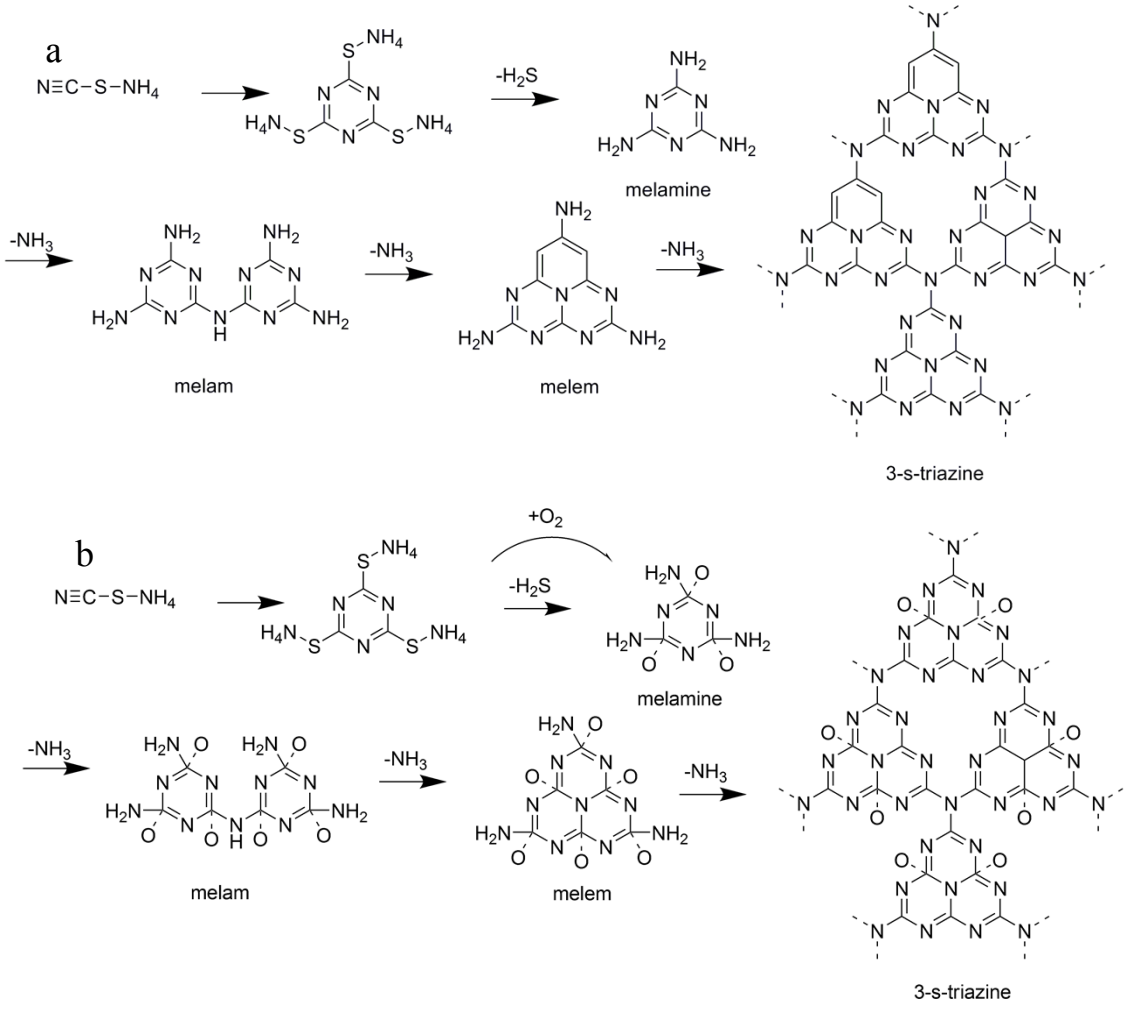


Figure S3. TG-DSC thermograms of g-C_3N_4 nanosheets.

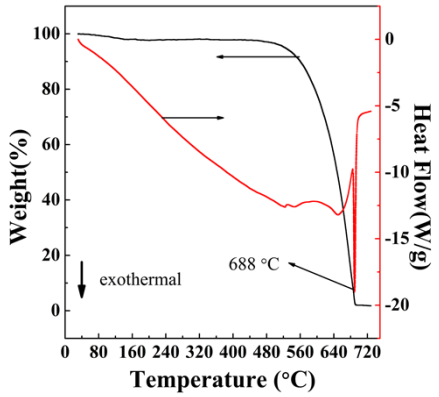


Figure S4. X-ray photoelectron spectra for the g-C_3N_4 and N-TiO_2/g-C_3N_4 (1:3) composite.

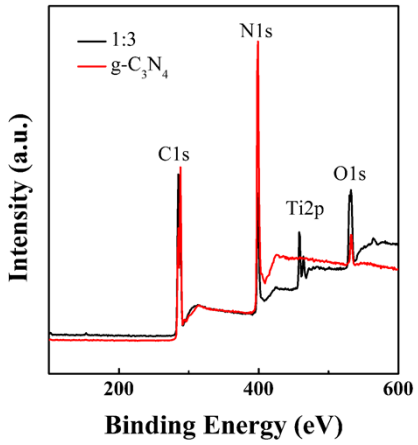


Figure S5. UV-vis diffuse reflectance spectra (a) and plots of $(\alpha h\nu)^2$ versus photon energy ($h\nu$) (b) of N-TiO_2, g-C_3N_4 and the N-TiO_2/g-C_3N_4 (1:3) heterojunctions.

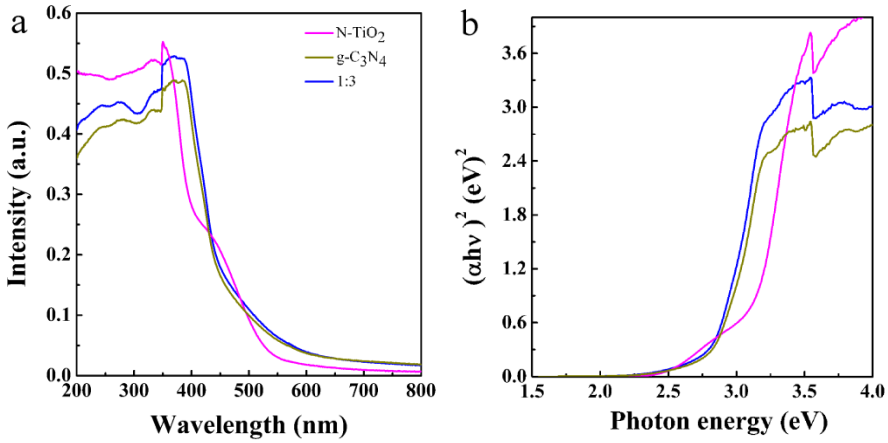


Figure S6. Nitrogen adsorption-desorption isotherms (a) and the corresponding BJH pore-size distribution curves (b) of N-TiO_2 nanoparticles, g-C_3N_4 nanosheets and 1:3 N-TiO_2/g-C_3N_4 heterojunctions.

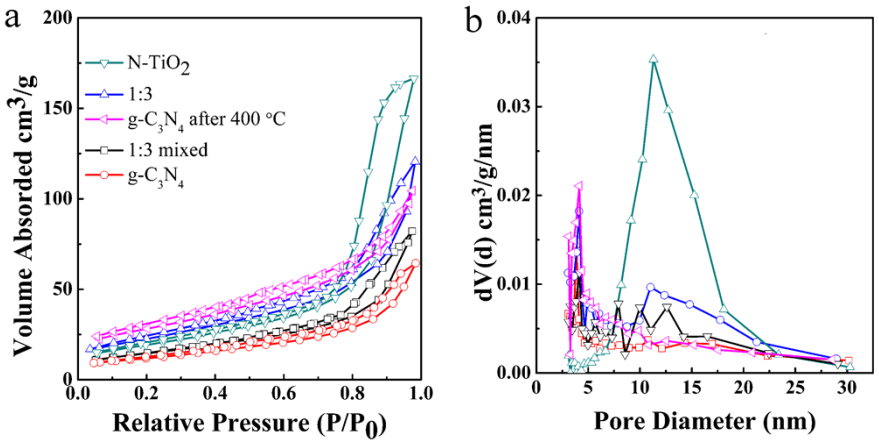


Figure S7. Evolution of UV-vis spectra of the RhB solution in the presence of g-C_3N_4/N-TiO_2 (1:3) heterojunctions under continuous stirring first in dark (a) and then under visible-light irradiation (b).

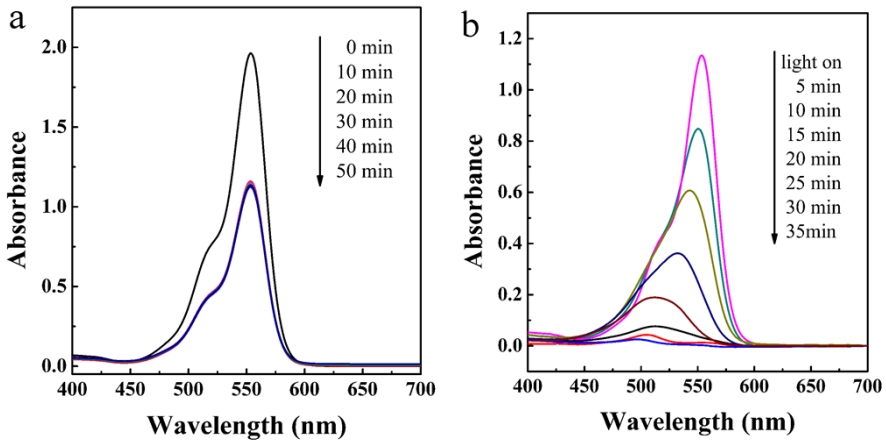


Figure S8. Degradation of RhB over N-TiO_2, g-C_3N_4 nanosheets and their heterojunctions (a) and N-TiO_2, p-g-C_3N_4 and their heterojunctions (b) fitted by a pseudo-first-order kinetic model.

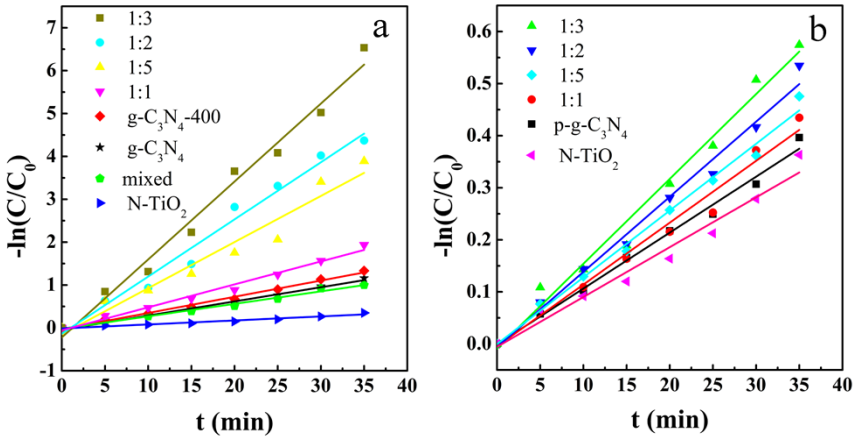


Figure S9. XRD patterns (a) and FT-IR spectra (b) of the as-prepared N-TiO_2/g-C_3N_4 photocatalyst before and after seven cycles of RhB degradation.

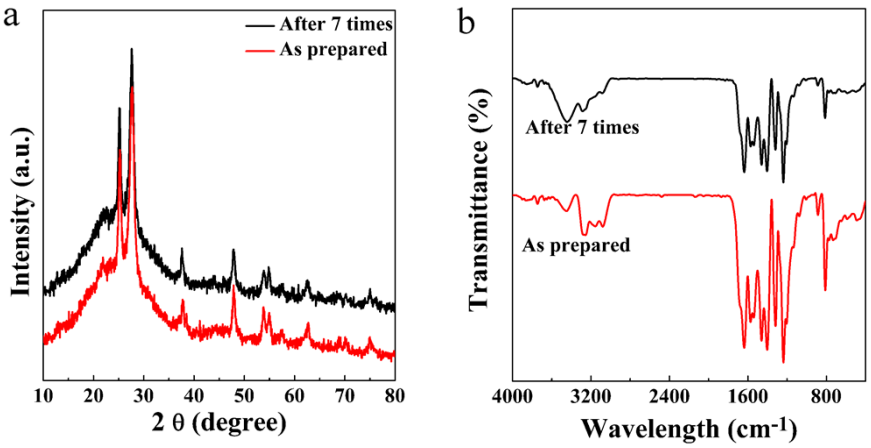


Figure S10. SEM image of the N-TiO_2/g-C_3N_4 photocatalyst after seven cycles of RhB degradation.