

## Supporting information

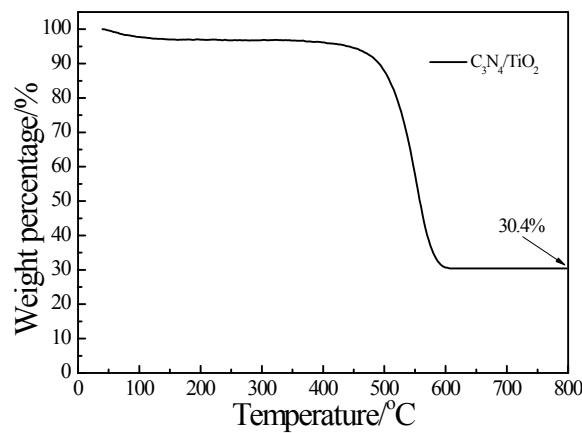


Fig. S1 TGA curves of the as-prepared  $C_3N_4/TiO_2$  sample.

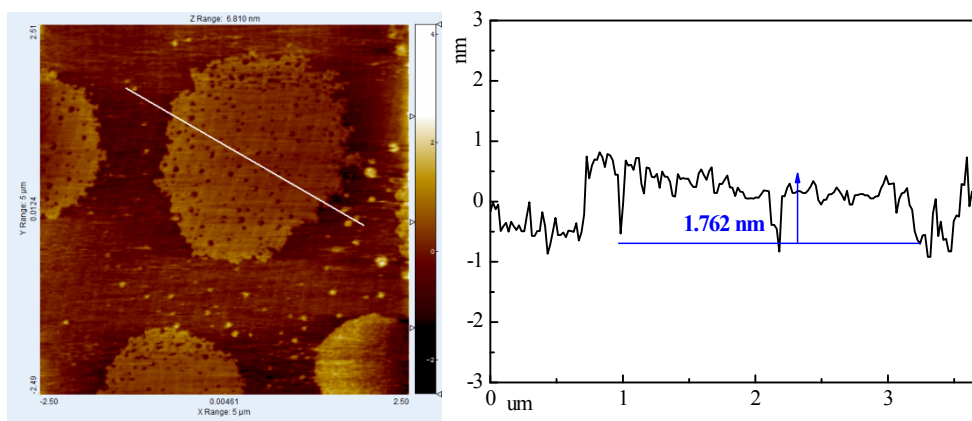
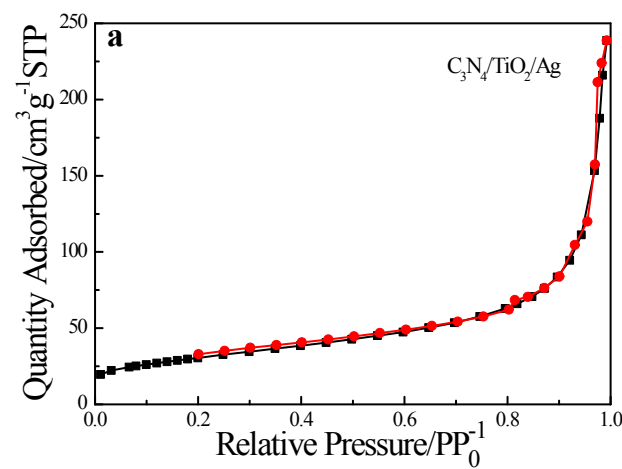


Fig. S2 AFM image and height profile of  $C_3N_4$  nanosheet on a silicon wafer.



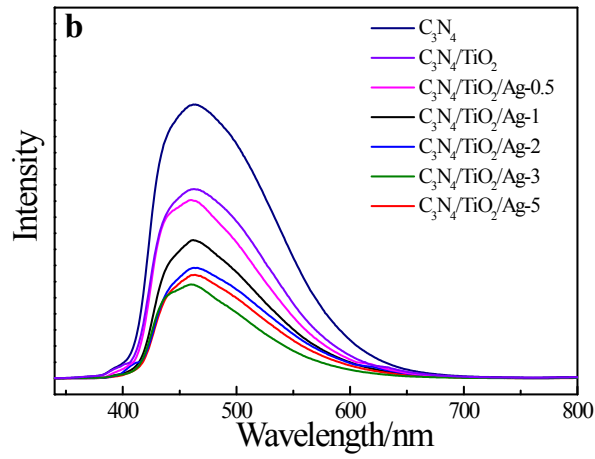


Fig. S3 (a) Nitrogen adsorption-desorption isotherms of  $C_3N_4/TiO_2/Ag-3$  sample; (b) PL spectra of  $C_3N_4$ ,  $C_3N_4/TiO_2$  and  $C_3N_4/TiO_2/Ag$  samples.

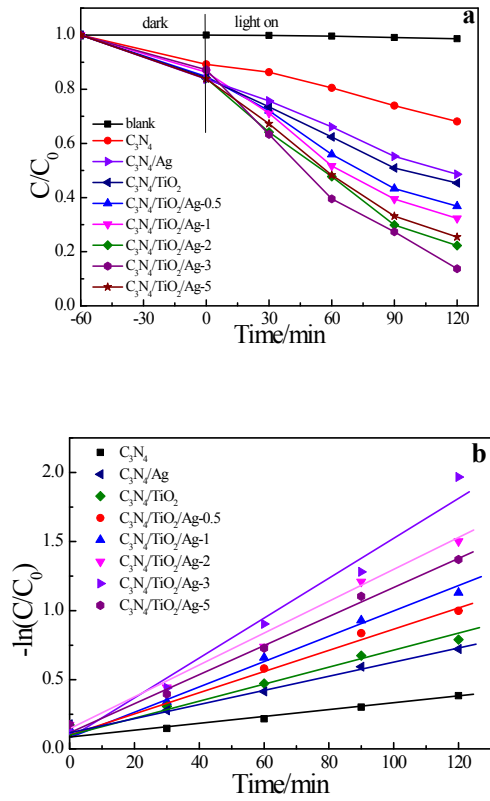


Fig. S4 (a) Photocatalytic degradation of MB over  $C_3N_4$ ,  $C_3N_4/Ag$ ,  $C_3N_4/TiO_2$  and  $C_3N_4/TiO_2/Ag$  under visible-light irradiation, and (b) their corresponding kinetic simulation curves.

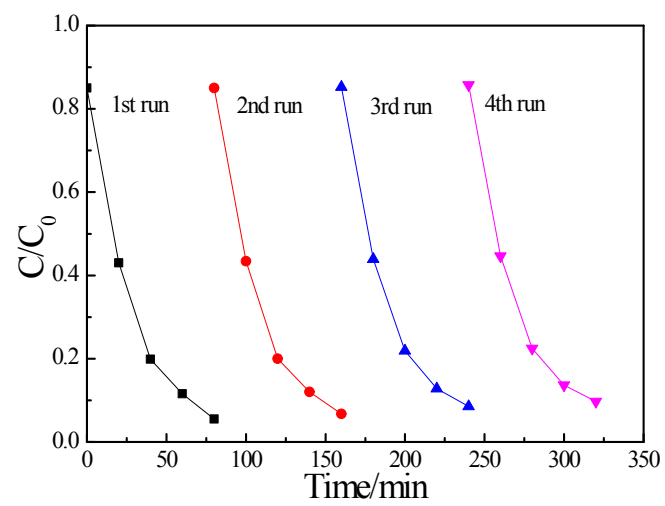


Fig. S5 Cycle runs of  $C_3N_4/TiO_2/Ag-3$  photocatalyst for RhB degradation under visible-light irradiation.