Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting information

Fabrication of the magnetic g-C_3N_4 for effectively enhanced tetracycline degradation with RGO as mediator

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2.4 Adsorption, photocatalytic experiments

The adsorption behavior of these samples was carried out by adsorbing tetracycline aqueous solution. In a typical reaction system, 0.05 g Fe_3O_4@g-C_3N_4/RGO was added into100 mL, 20 mg L^{-1} tetracycline solution with magnetically stirred. Then, 5 mL solutions were sampled with an injector in each 20 min until reached adsorption/desorption equilibration. The photocatalytic activities were evaluated through decomposing tetracycline under a 300 W Xe lamp with 0.05 g photocatalyst, the irradiation time was interval of every 20 min, and 4 mL solution was sampled and magnetic separated, then monitoring the absorbance of tetracycline by UV−vis spectrophotometer.

2.5 Photoelectrochemical measurements

The photoelectrochemical performance of samples was investigated by the photocurrent response and electrochemical impedance spectroscopy (EIS) in a CHI852C electrochemical station with a Xenon lamp (Newport 69920, 300 W). The as-prepared samples were dipcoated onto FTO substrates (1.0 cm^2) and used as corresponding working electrodes. A Pt electrode and Ag/AgCl (saturated KCl) were used as counter electrode and reference electrode, respectively. EIS measurements were carried out on a ZENNIUM electrochemical workstation (Zahner Instruments, Germany).

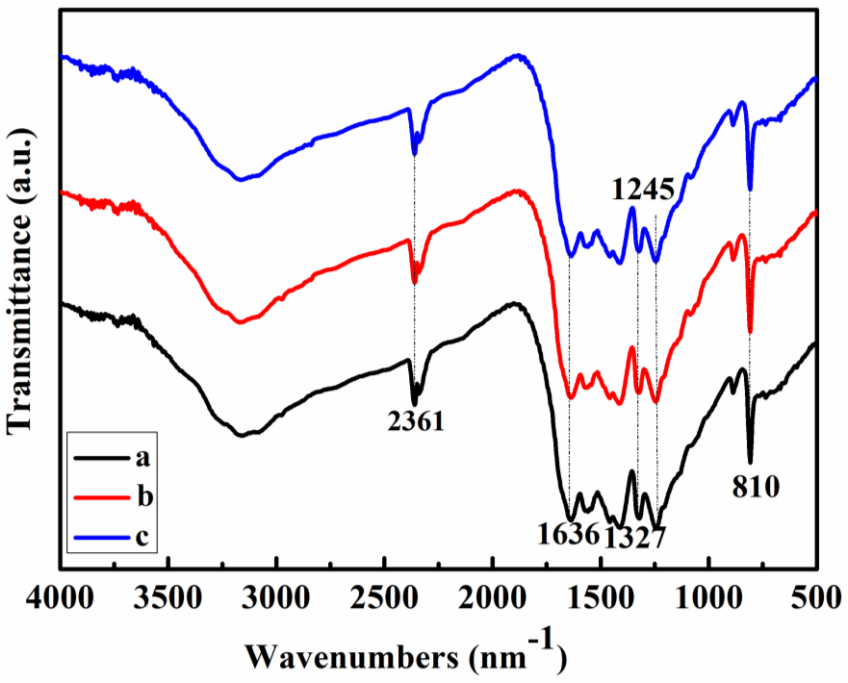

Fig. S1 FT-IR spectra of (a) g-C_3N_4, (b) 5% Fe_3O_4@g-C_3N_4 and (c) 5% Fe_3O_4@g-C_3N_4/RGO

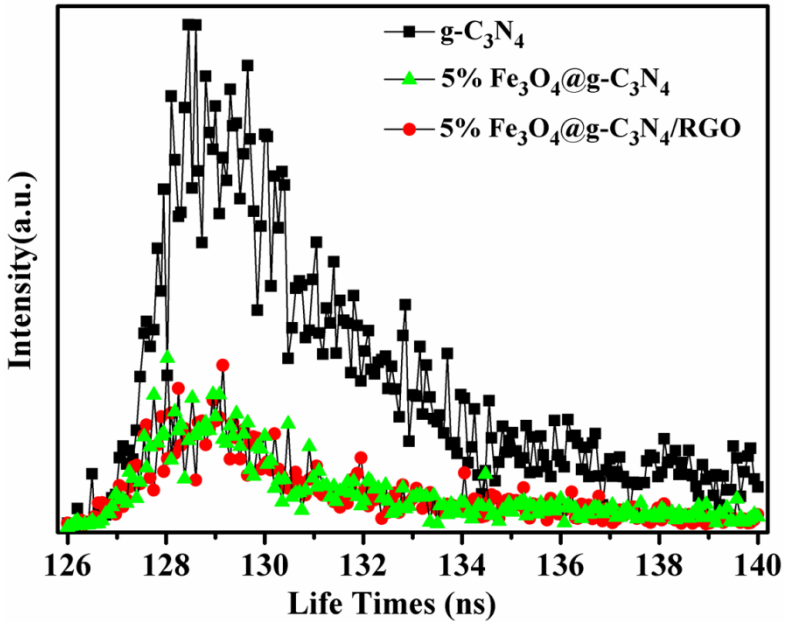

Fig. S2 The FL spectra of g-C_3N_4, 5%Fe_3O_4@g-C_3N_4 and 5%Fe_3O_4@g-C_3N_4/RGO

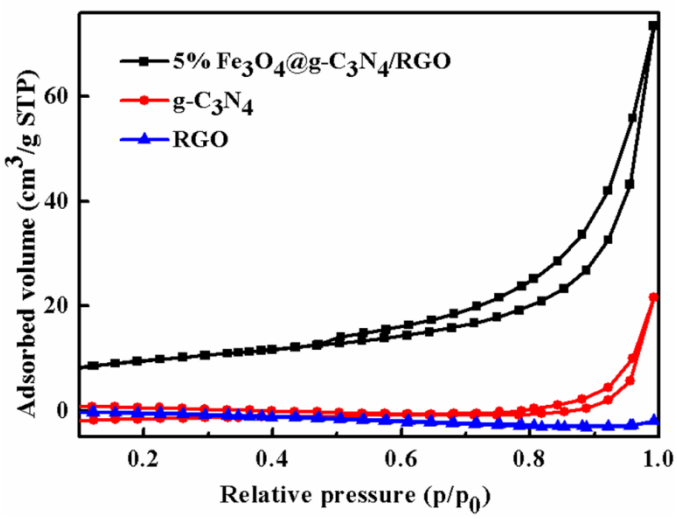

Fig. S3 BET analysis of g-C_3N_4, RGO, and 5% Fe_3O_4@g-C_3N_4/RGO

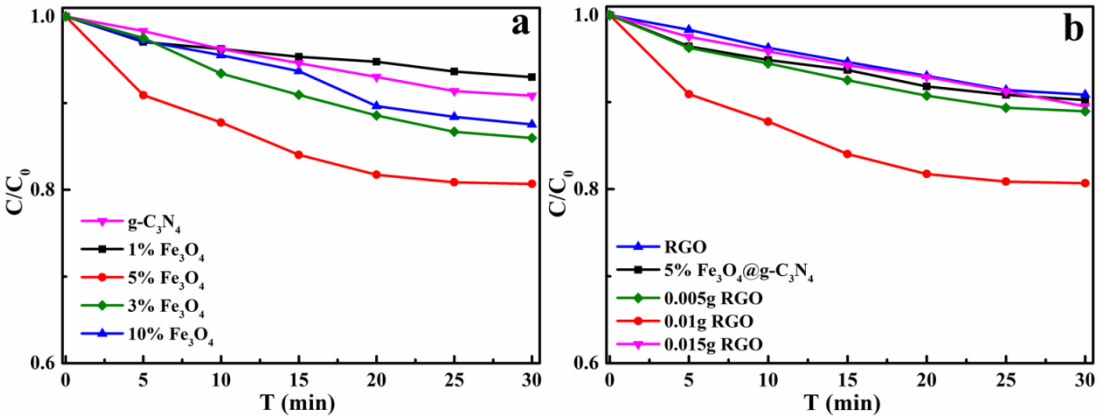

Fig. S4 (a) The adsorption ability of tetracycline over the sample with different Fe_3O_4 ratios and the same RGO amount (10 mg). (b) The adsorption ability of tetracycline over the sample with different RGO amount and the same Fe_3O_4 ratios of 5% and without RGO.

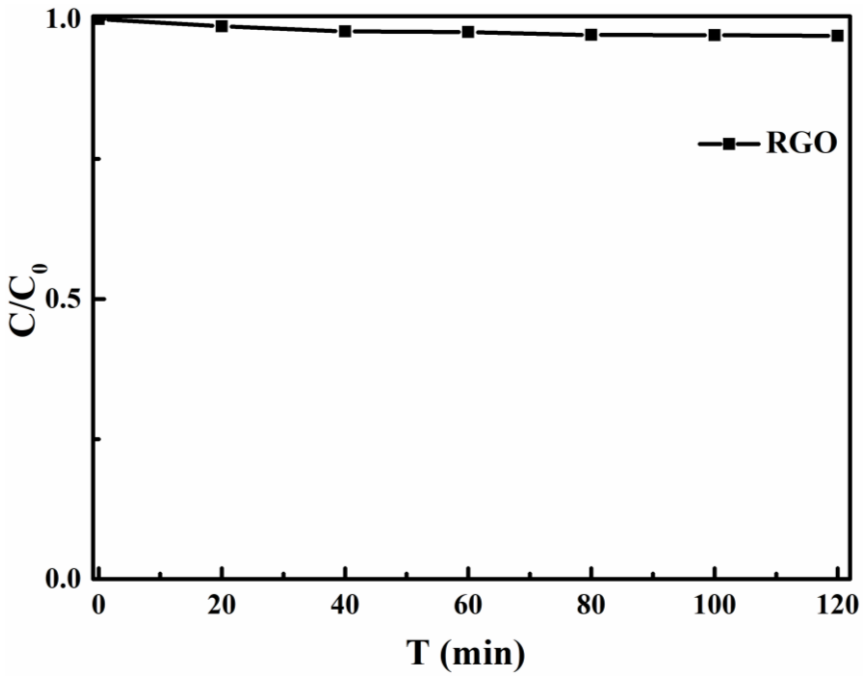

Fig. S5 Effect of the RGO on degradation of tetracycline