

Supporting Information`s for RSC Advances

Graphene Oxide – Metal Oxide Nanocomposites: Fabrication, Characterization and Removal of Cationic Rhodamine-B Dye

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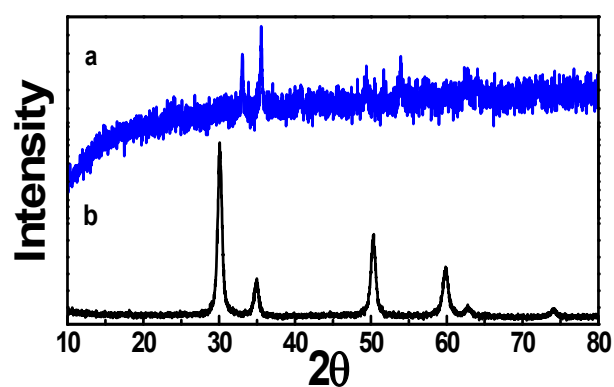


Fig. S1 XRD patterns of: (a) Fe_3O_4 NPs (b) ZrO_2 NP

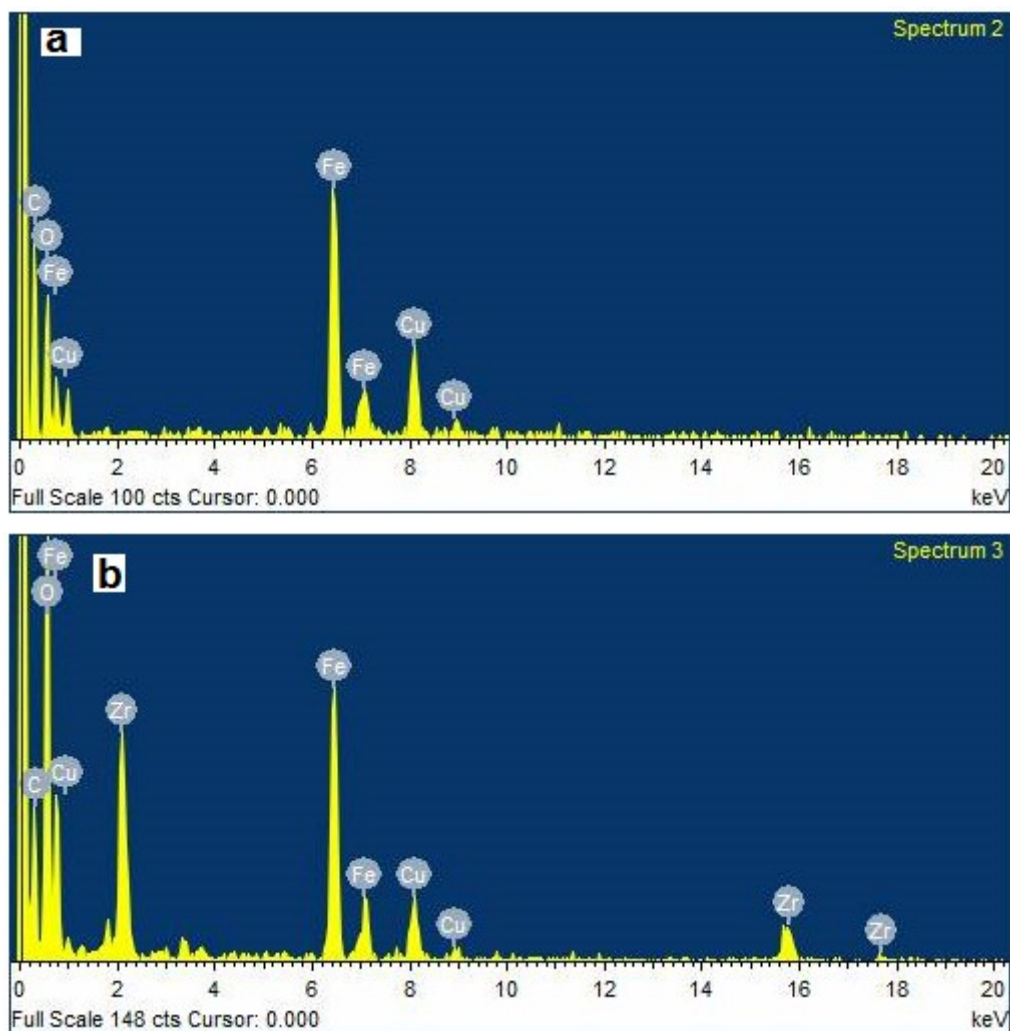


Fig. S2 EDX analysis of: (a) $\text{GO-Fe}_3\text{O}_4$, and (b) $\text{GO-Fe}_3\text{O}_4@Zr\text{O}_2$.

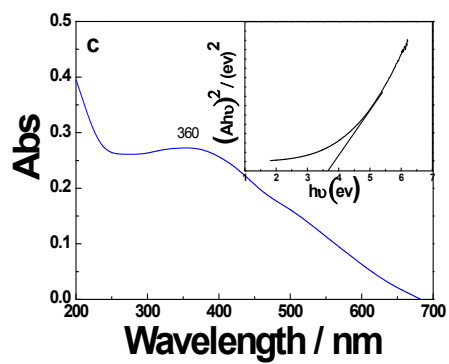
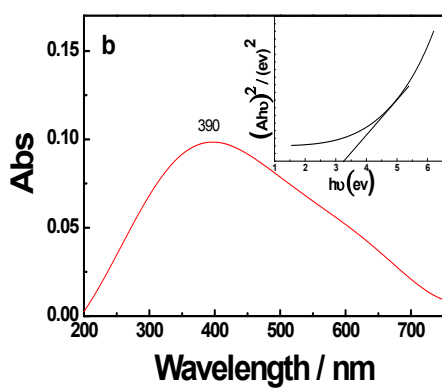
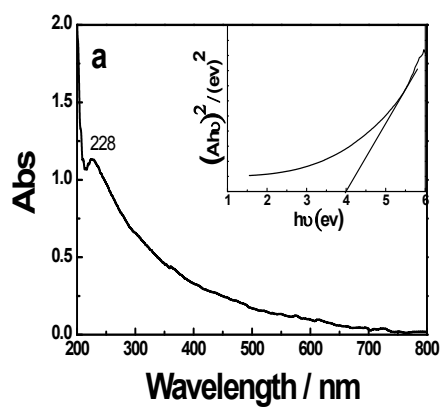


Fig. S3 UV-visible absorbance spectra of: (a) GO, (b) GO-Fe₃O₄@ZrO₂, and (c) and GO-Fe₃O₄ in water.

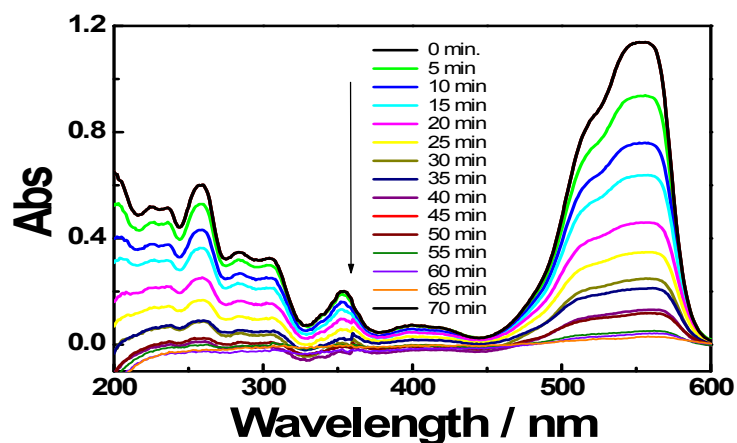


Fig. S4 UV-absorbance spectra of RhB in the presence of GO-Fe₃O₄ in water at the indicated time intervals under UV irradiation at 256 nm.

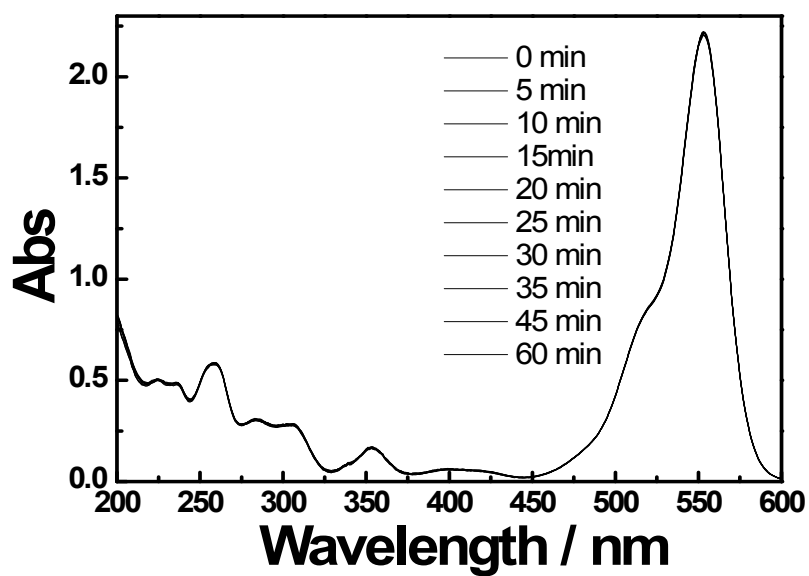


Fig. S5. UV absorbance spectrum of RhB in water with different time under radiation.

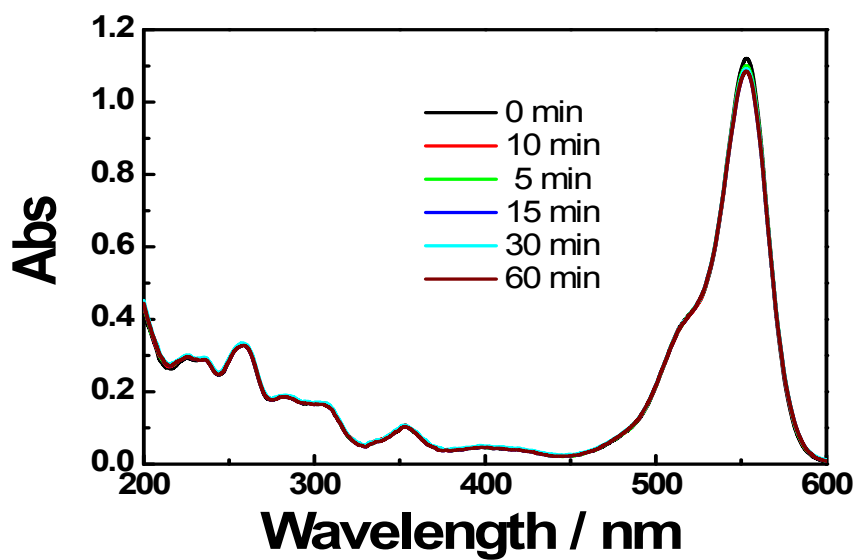


Fig. S6. UV- absorbance spectra of RhB in the presence of GO-Fe₃O₄ in water with different time under simulator of sun light.

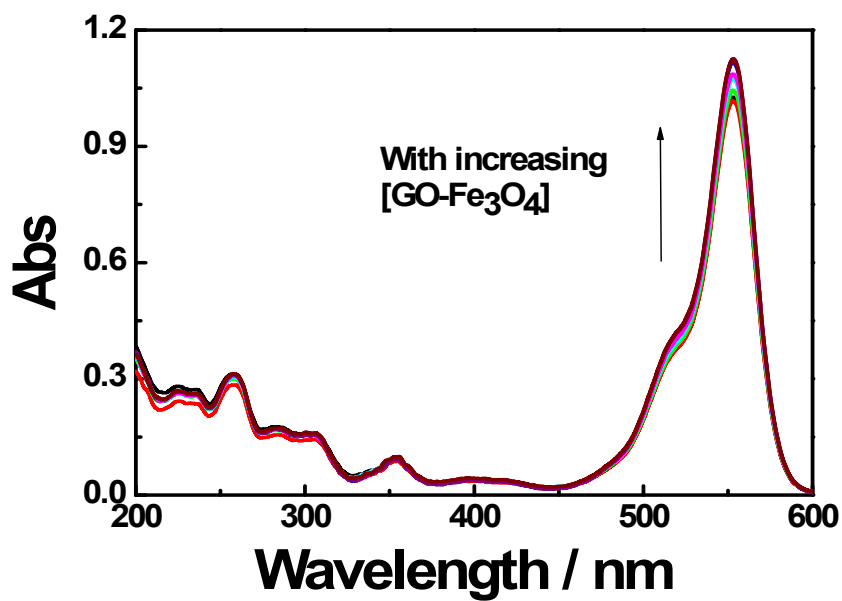


Fig. S7. UV-visible absorption spectra of RhB (1.7×10^{-5} M) with different concentrations of GO-Fe₃O₄ in water.

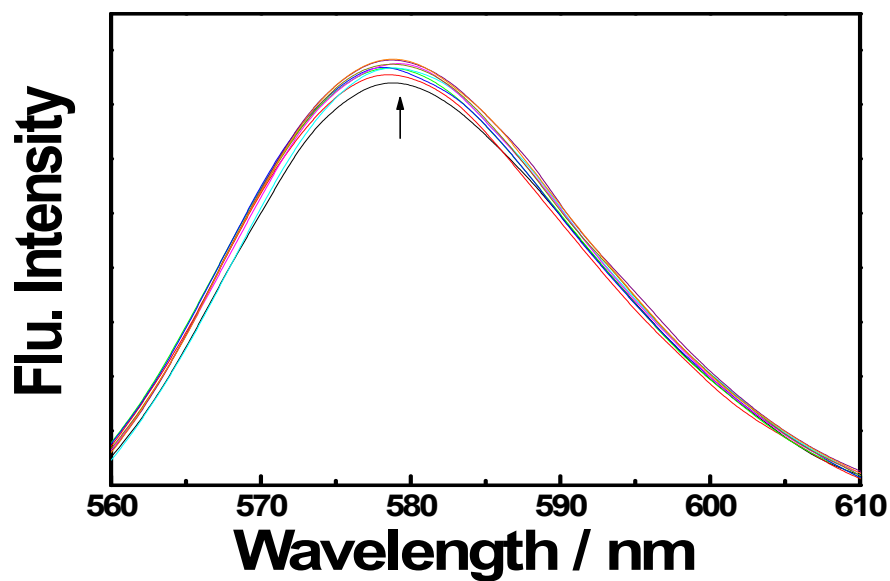


Fig. S8. Fluorescence spectra of RhB (1.7×10^{-5} M) with different concentrations of GO-Fe₃O₄ without radiation in water.

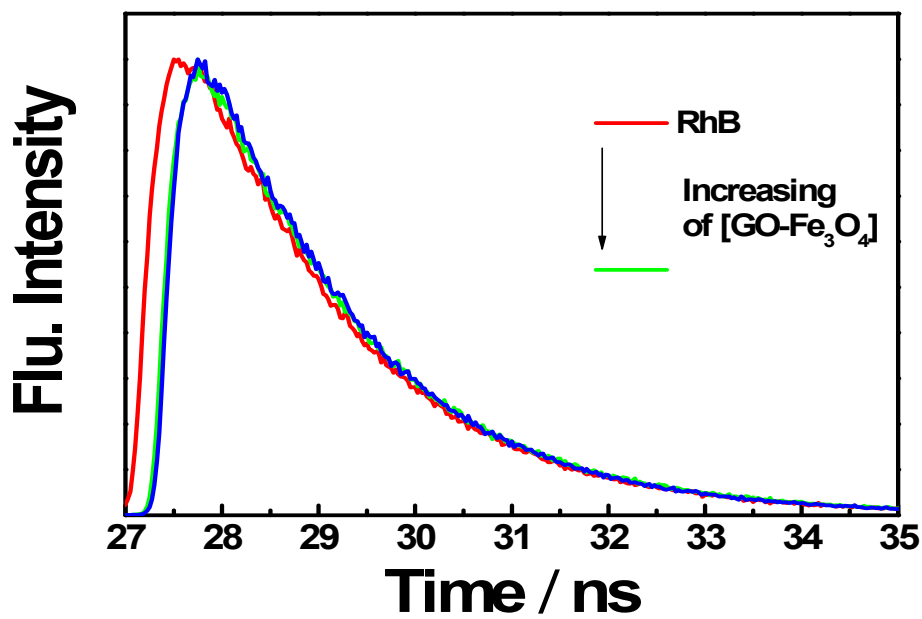


Fig. S9. Fluorescence decay profiles of the singlet-excited state of RhB in the presence of GO-Fe₃O₄ in water; $\lambda_{\text{ex}} = 420$ nm; $\lambda_{\text{em}} = 580$ nm.

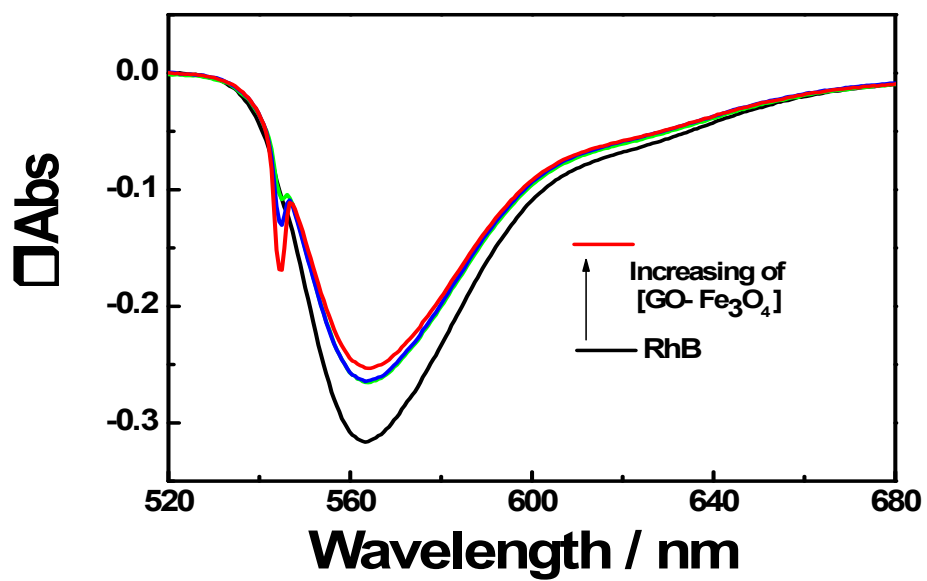


Fig. S10 Nanosecond transient absorption spectra of RhB in the presence of GO-Fe₃O₄ in oxygen-free water solutions; $\lambda_{\text{ex}} = 550$ nm.