Supplementary Material

Determination of trace rhodamine B by spectrofluorometry and magnetic solid phase extraction based on a 3D reduced graphene oxide nanocomposite

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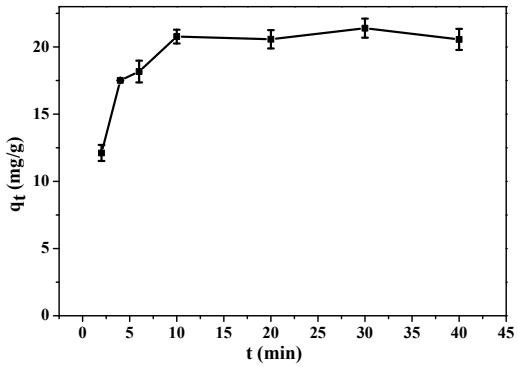

Fig. S1. Effect of adsorption time on the adsorbed amount of rhodamine B by 3D-RGO/Fe_3O_4.

Table S1

Adsorption kinetics parameters for the adsorption of rhodamine B onto 3D-RGO/Fe_3O_4.

$q_{e,exp}$ (mg g^{-1})	$q_{e,cal}$ (mg g^{-1})	k_s (g mg^{-1} min^{-1})	R^2
20.773	21.436	0.0508	0.9980

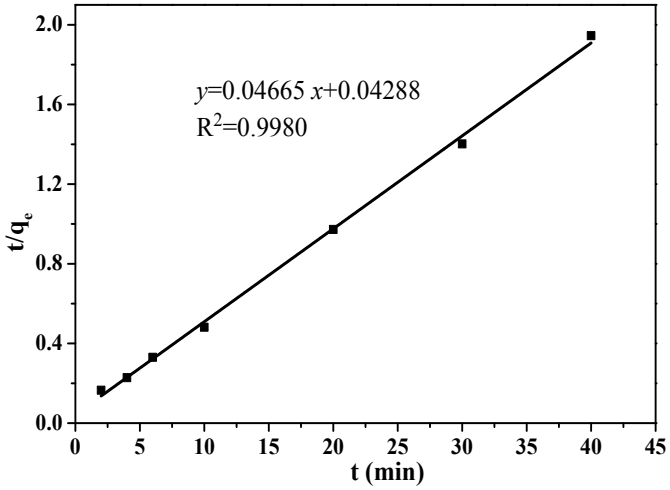

Fig. S2. Pseudo-second order model of rhodamine B onto 3D-RGO/Fe_3O_4.

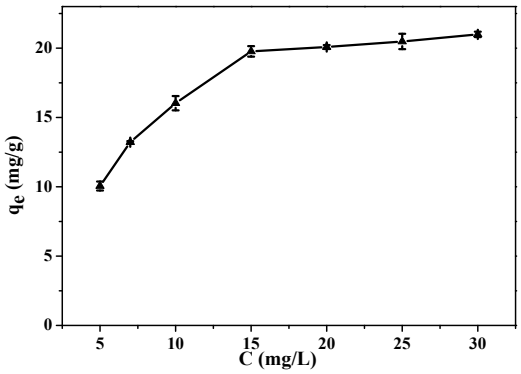

Fig. S3. Adsorption isotherms of rhodamine B with different concentrations.

Table S2

Two isotherm model parameters for the adsorption of rhodamine B onto 3D-RGO/Fe_3O_4

Langmuir isotherm			Freundlich isotherm		
Q_{max}(mg g^{-1})	b(L mg^{-1})	R^2	K_F(mg $g^{-1}\cdot(L\cdot mg^{-1})^{-1/n}$)	1/n	R^2
22.09	0.85	0.9942	11.2595	0.2279	0.9017

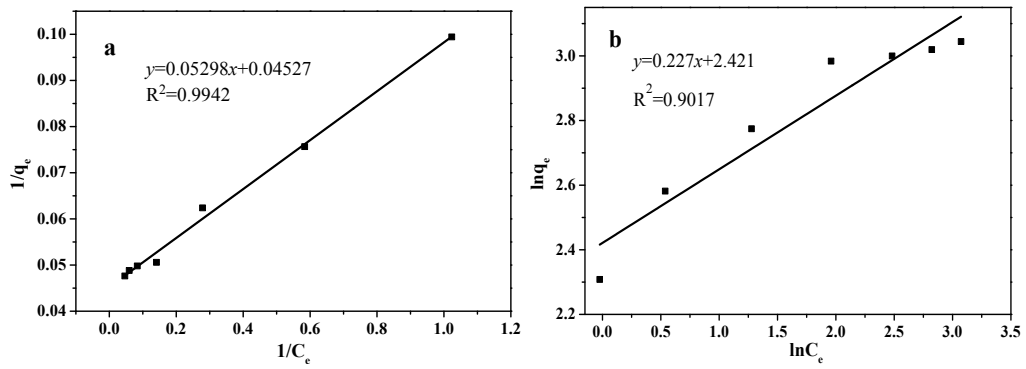

Fig. S4. Langmuir isotherm model of rhodamine B onto 3D-RGO/Fe_3O_4 (a); Freundlich isotherm model of rhodamine B onto 3D-RGO/Fe_3O_4 (b).

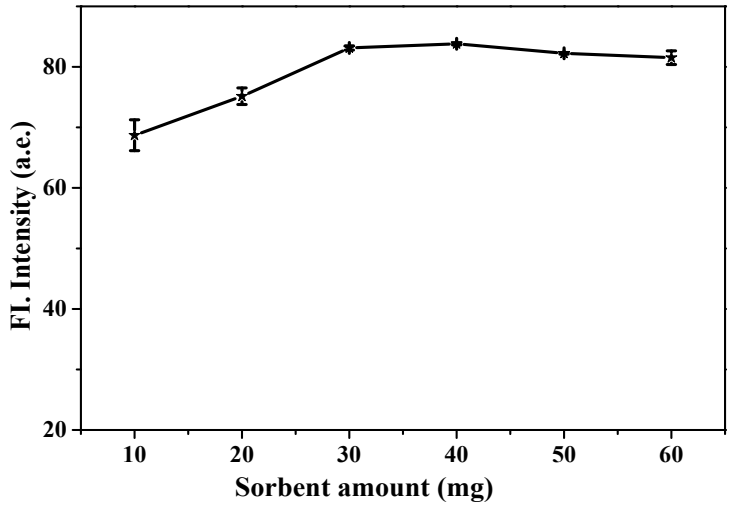

Fig. S5. Effect of sorbent dosage;

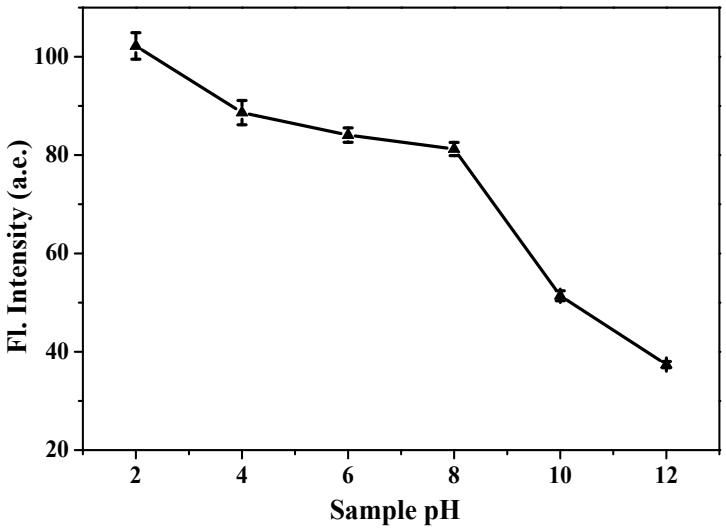

Fig. S6. Effect of pH;

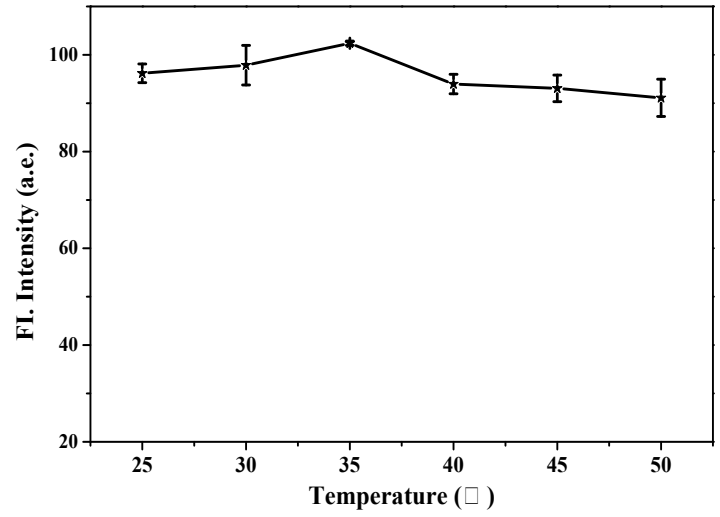

Fig. S7. Effect of extraction temperature

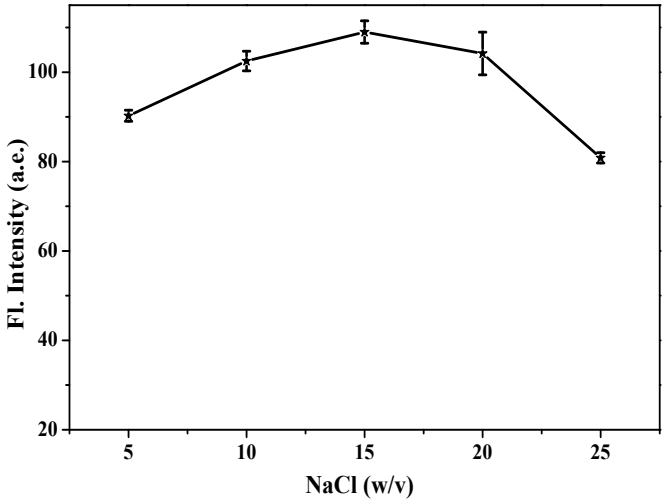

Fig. S8. Effect of ionic strength

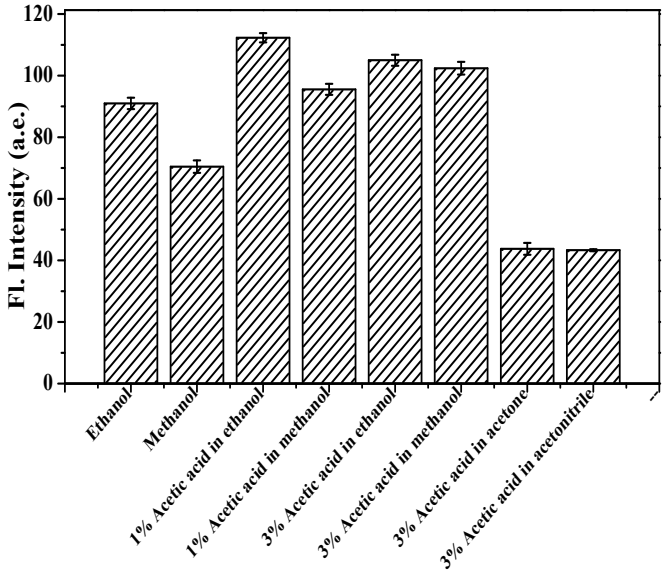

Fig. S9. Effect of desorption solvent.

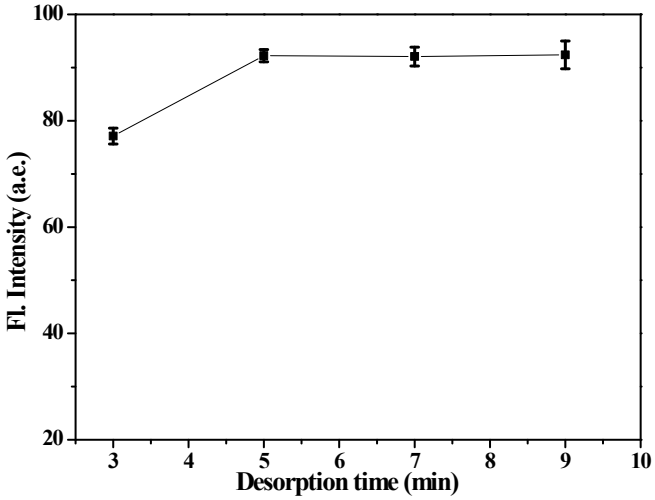

Fig. S10. Effect of desorption time for rhodamine B.

Table S3. Tolerance limits of interfering species on the recovery of 50 μg L^{-1} of rhodamine B from water.

Ions	Tolerance ratio (w/v)	Added as	Recovery (%)
K^+	4000	KCl	95.36
Ca^{2+}	4000	$CaCl_2$	102.73
Mg^{2+}	2000	$MgCl_2$	97.35
Fe^{3+}	800	$FeCl_3 \cdot 6H_2O$	97.16
Zn^{2+}	240	$ZnSO_4$	101.06
Cu^{2+}	100	$CuCl_2$	96.97
NO_3^-	3800	$NaNO_3$	104.24
SO_4^{2-}	1000	Na_2SO_4	101.00
CO_3^{2-}	1000	Na_2CO_3	103.16
Glucose	500	Glucose	95.94
Citrate	500	Sodium citrate	100.87