**Supplementary Material**

**Epoxide Functional γ-Al2O3/Fe3O4/SiO2 Ceramic Nanocomposite Particles as Adsorbent for Reactive Azo Dye: Understanding Surface Property**

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**Figure S1.** Point of zero charge (PZC) of γ-Al2O3/Fe3O4/SiO2/PGMA (circle) and γ-Al2O3/Fe3O4/SiO2 (square) nanocomposite particles.



**Figure S2.** The effect of doses of γ-Al2O3/Fe3O4/SiO2/PGMA (circle) and γ-Al2O3/Fe3O4/SiO2 (square) nanocomposite particles on the amount of dye adsorbed at pH 7.45 and 7.20. Conditions: RN, 100 mg L-1; Total volume, 30 mL; Temperature, 303 K.



**Figure S3.** Langmuir isotherms for RN adsorption on γ-Al2O3/Fe3O4/SiO2 nanocomposite particles. Conditions: Particles, 0.01 g; Total volume, 30 mL; pH, 7.20; Contact time, 5 min.



**Figure S4.** Freundlich isotherms for RN dye adsorption on γ-Al2O3/Fe3O4/SiO2 nanocomposite particles. Conditions: Particles, 0.01 g; Total volume, 30 mL; pH, 7.20; Contact time, 5 min.



**Figure S5.** Temkin isotherms for RN dye adsorption on γ-Al2O3/Fe3O4/SiO2 nanocomposite particles. Conditions: Particles, 0.01 g; Total volume, 30 mL; pH, 7.20; Contact time, 5 min.



**Figure S6.** ln (qe/Ce) versus qe plots for the determination of thermodynamic equilibrium constant Kc for adsorption on A) γ-Al2O3/Fe3O4/SiO2/PGMA (at pH 7.45) and B) γ-Al2O3/Fe3O4/SiO2 (at pH 7.20) nanocomposite particles. Conditions: Particles, 0.01 g; Total volume, 30 mL; Contact time, 5 min.



**Figure S7.** Van’t Hoff plots of adsorption equilibrium constant Kc for adsorption of RN on γ-Al2O3/Fe3O4/SiO2/PGMA (circle), and γ-Al2O3/Fe3O4/SiO2 (square) nanocomposite particles.



**Figure S8.** Pseudo-second-order model for adsorption of RN on γ-Al2O3/Fe3O4/SiO2 nanocomposite particles.



**Figure S9.** FTIR spectra of a) RN, and γ-Al2O3/Fe3O4/SiO2/PGMA nanocomposite particles b) before and c) after adsorption of RN.