Electronic Supplementary Information

**Fig. S1.** Molecular structures of poly (4-styrenesulfonic acid-co-maleic acid) sodium salt (PSSMA) (A) and three cationic dyes: basic fuchsin (BF) (B), crystal violet (CV) (C) and methylene blue (MB) (D).
**Fig. S2.** UV-vis spectra of GO (a), M-rGO (b), M-rGO-060 (c) and PSSMA (d) dispersed in water.
Fig. S3. Digital photographs of M-rGO-060 (a-f) and M-rGO (a’-f’) aqueous dispersions upon storing different time at room temperature.
Fig. S4. Adsorption capacities (A) and removal efficiencies (B) of BF, CV and MB onto Fe$_3$O$_4$-060, M-rGO-060 and rGO-060. Condition: $C_{BF} = C_{CV} = C_{MB} = 250$ mg/L, $m/V = 10$ mg/20 mL, $T = 25$ °C and contact time = 30 min.
Fig. S5. FT-IR spectrum of rGO-060.