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

Supporting Information

Dispersedly Embedded loading of Fe_3O_4 Nanoparticles into Graphene Nanosheets for Highly Efficient and Recyclable Removal of Heavy Metal Ions

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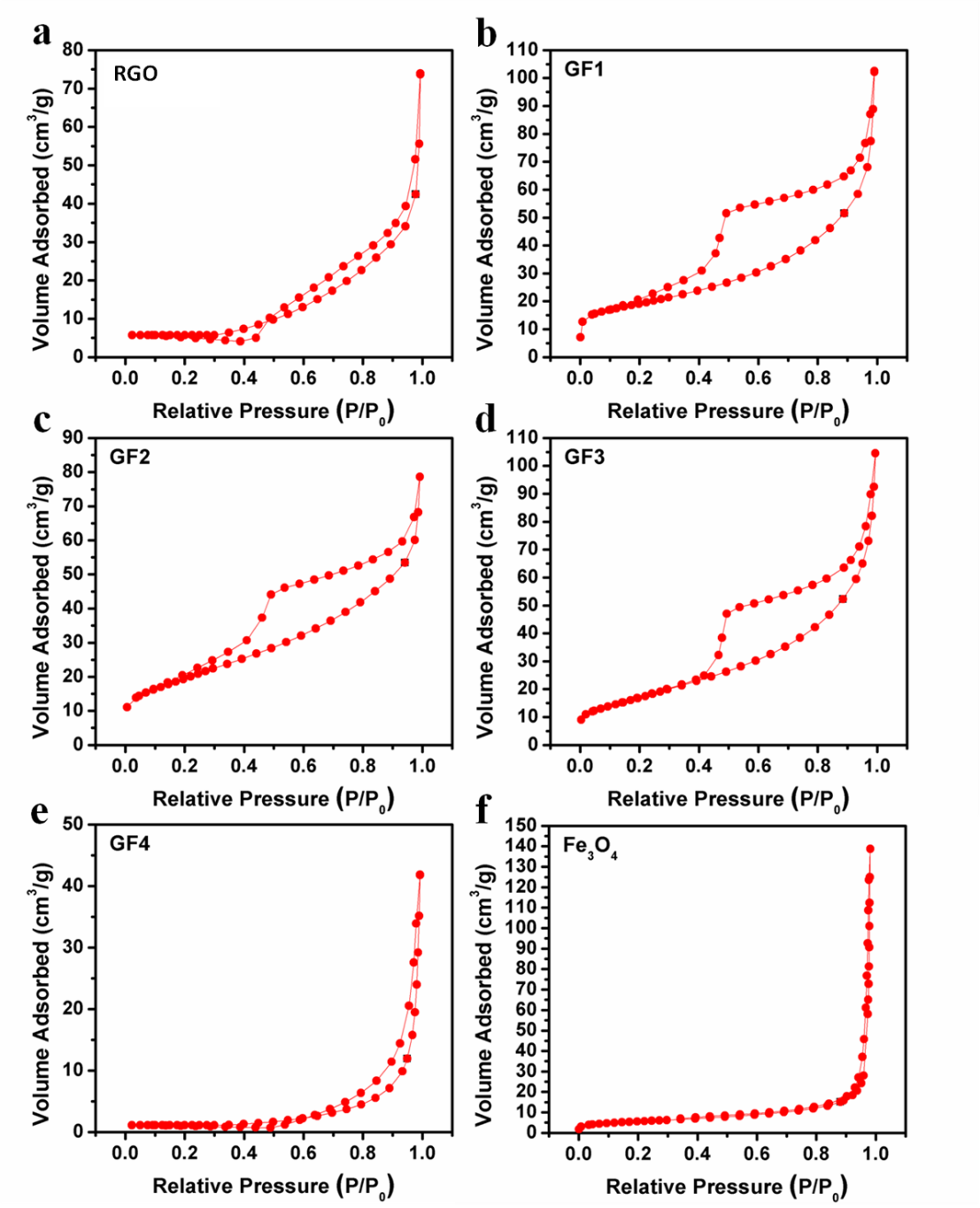

Fig. S1 Nitrogen adsorption–desorption curves of (a) pure RGO NSs, (b) GF1, (c) GF2, (d) GF3, (e) GF4 and (f) pure Fe_3O_4 NPs.

Specific surface areas of different samples are evaluated by nitrogen adsorption–desorption curves, as shown in Figs. S1(a)–(f). The specific surface areas, namely BET areas, are 25.03 m^2/g, 98.79 m^2/g, 109.95 m^2/g, 96.11 m^2/g, 4.75 m^2/g and 30.13 m^2/g for RGO, GF1, GF2, GF3, GF4 and Fe_3O_4, respectively.

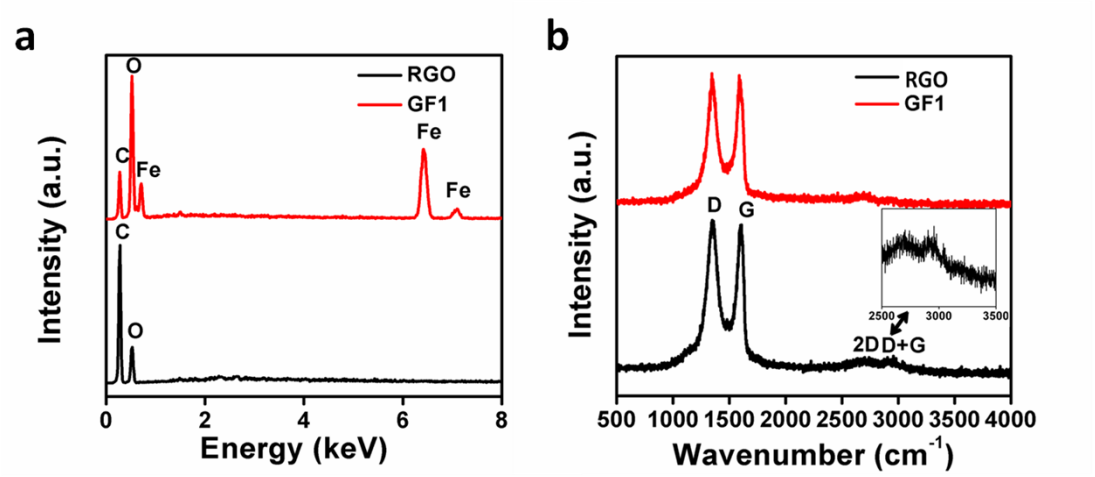

Fig. S2 (a) EDS spectra and (b) RS spectra of pure RGO NSs and GF1. The insets show the amplified 2D band with the D+G combination band of pure RGO NSs.

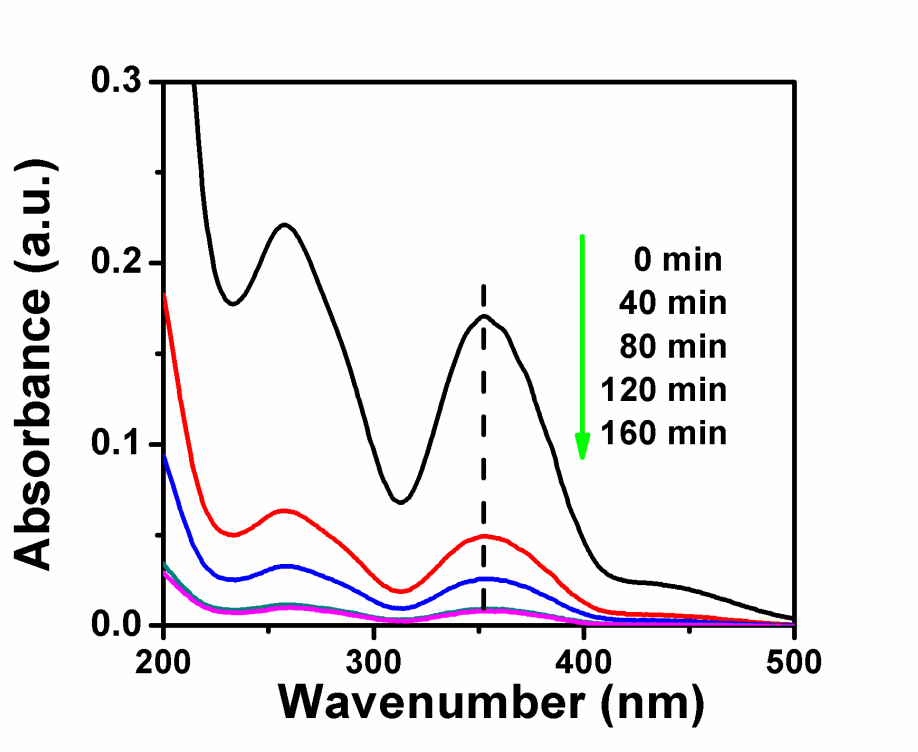

Fig. S3 UV–vis absorption spectra of Cr(Ⅵ) solutions treated with GF2 at different adsorption times for the adsorption kinetics study.

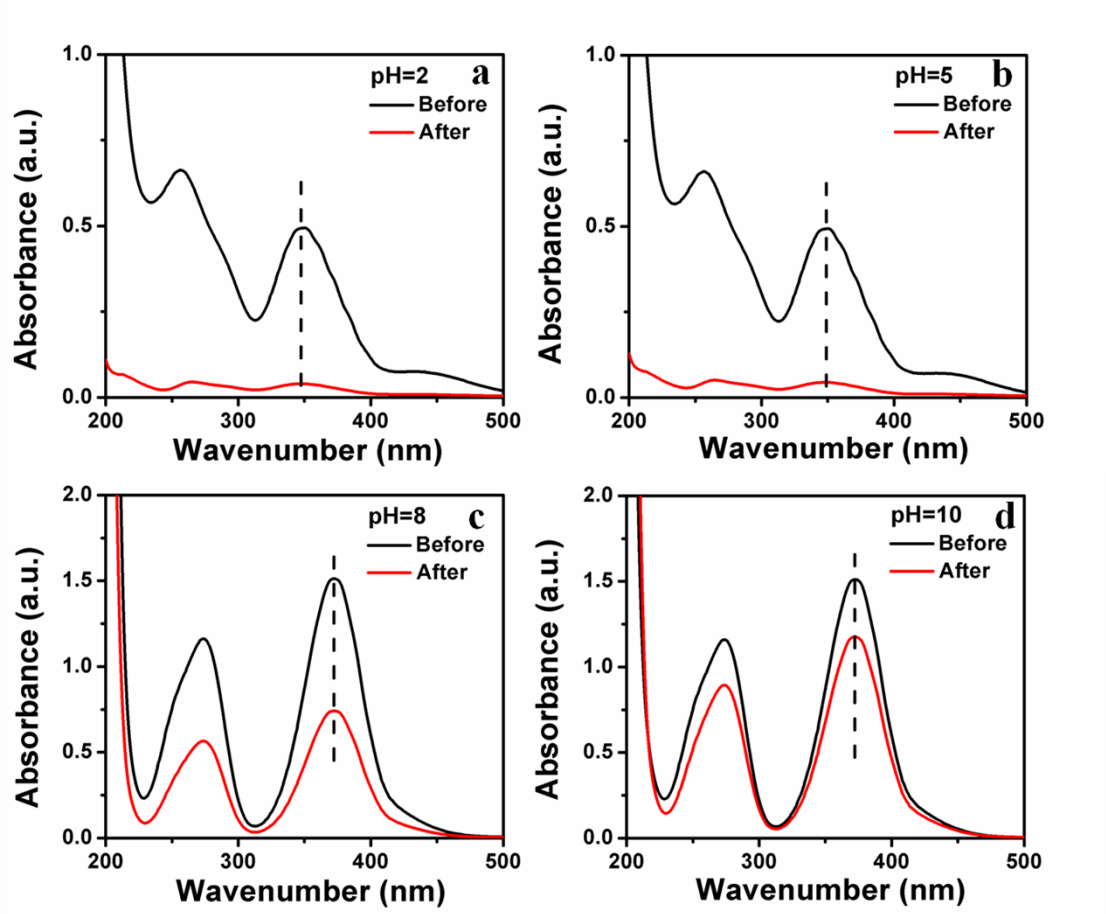

Fig. S4 UV–vis absorption spectra of Cr(Ⅵ) solutions with different pH values of (a) 2, (b) 5, (c) 8 and (d) 10 before and after treated with GF2 for 20 min.

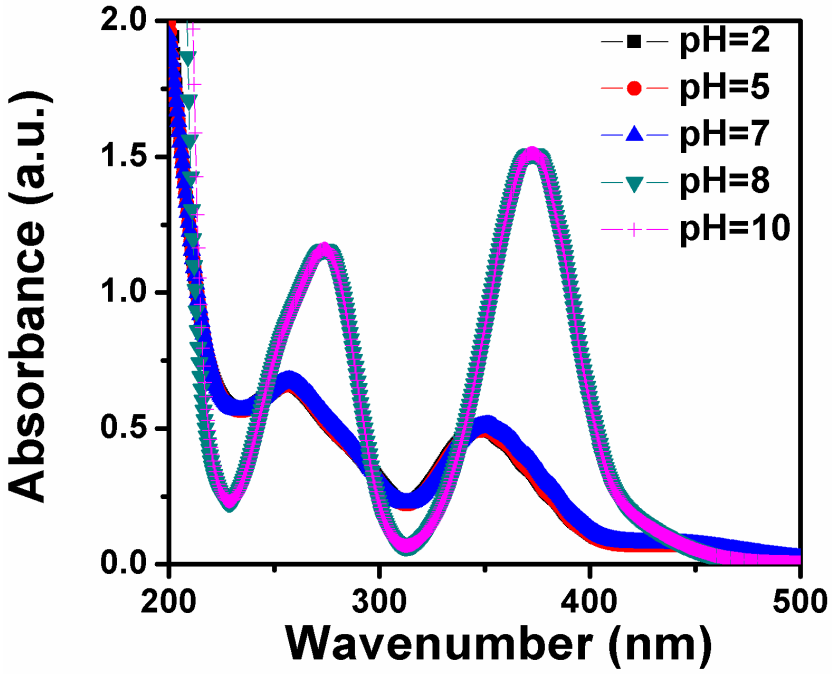

Fig. S5 UV–vis absorption spectra of the initial Cr(Ⅵ) solutions with different pH values.

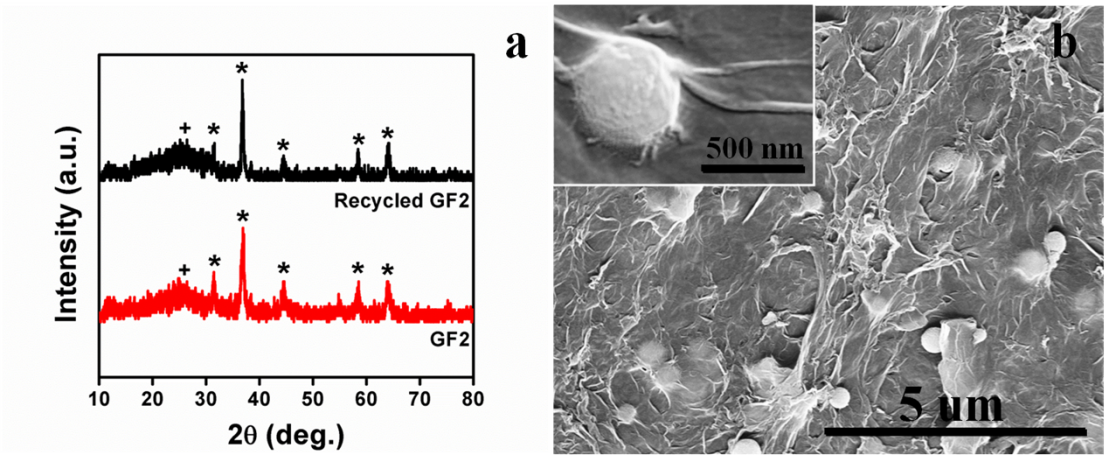

Fig. S6 (a) XRD patterns (RGO: ＋, Fe_3O_4: ＊) and (b) FESEM image of the recycled GF2. The inset shows a locally amplified FESEM image.

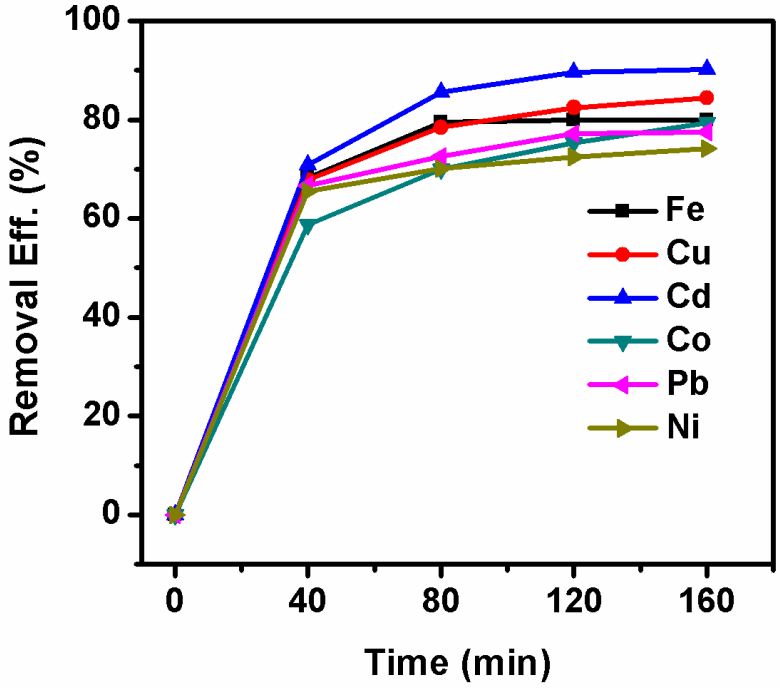

Fig. S7 Effect of time on adsorption behavior of Fe(Ⅲ), Cu(Ⅱ), Cd(Ⅱ), Co(Ⅱ), Pb(Ⅱ) and Ni(Ⅱ).