**Supporting information**

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**Figure S1** TG/DSC traces of the different samples heated in flowing oxygen



**Figure S2** Room temperature hysteresis loops of MESM-P, the inset shows a magnified view of the hysteresis loops of MESM-24h.



**Figure S3** Effects of Mass of Fe3O4 loading in ESM on the adsorption capacity of CR

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**Figure S4.** The effect of contact time on the adsorption capacity for (a) MESM-P, (b) Fe3O4, and (c) ESM-P.

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**Figure S5. (a)** UV-vis adsorption spectra of CR (200 mg L-1) treated by MESM-P at various time intervals, (b) photographs of CR solutions before and after adsorption, and magnetic separation by external magnetic field.



**Figure S6** (a) Effect of the contact time on CR desorption from MESM-P in the various ethanol-water solvent, (b) Effect of the contact time on CR desorption from MESM-P at different pH values.