Enhanced congo red dye removal from aqueous solutions using iron nanoparticles: adsorption, kinetics, and equilibrium studies

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Figure SI1. XRD patterns of S1 and S2 samples exposed for 5 days. b) XRD patterns of S1 (orange) and S2 (purple) after CR adsorption. Red and blue lines mark the powder diffraction data for lepidocrocite (FeOOH) and magnetite (Fe$_3$O$_4$), respectively.

Figure SI2. CR removal efficiency versus number of adsorption cycles of S1 and S2.
Figure SI3. a) 125 ppm of methyl orange (MO) solution and the solution after dye adsorption using S1 and S2 nanoparticles. b) 125 ppm of hydroxyl-naphthol blue (HB) solution and after dye adsorption using S1 and S2 nanoparticles.

Figure SI4. Effect of the pH value of the CR solution on the adsorption of CR by (S2) amorphous iron nanoparticles.