

## SUPPLEMENTARY INFORMATION

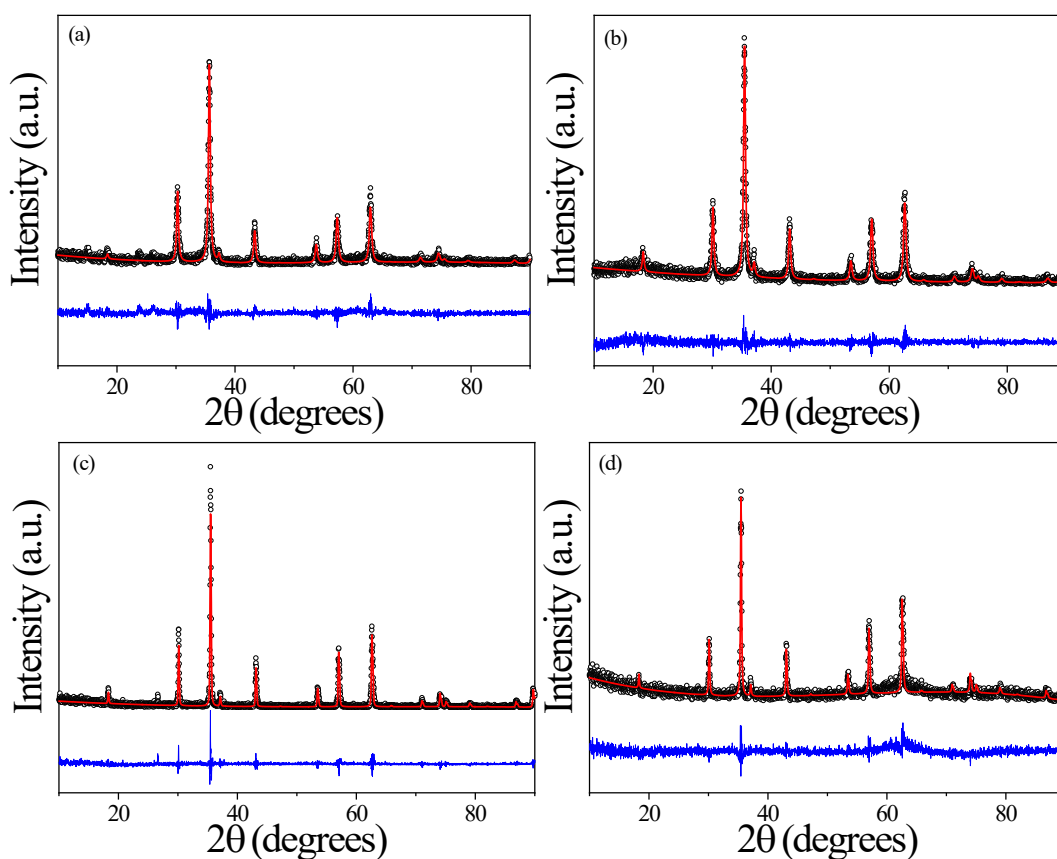
### Magnetic carbon Fe<sub>3</sub>O<sub>4</sub> nanocomposites synthesized via Magnetic Induction Heating

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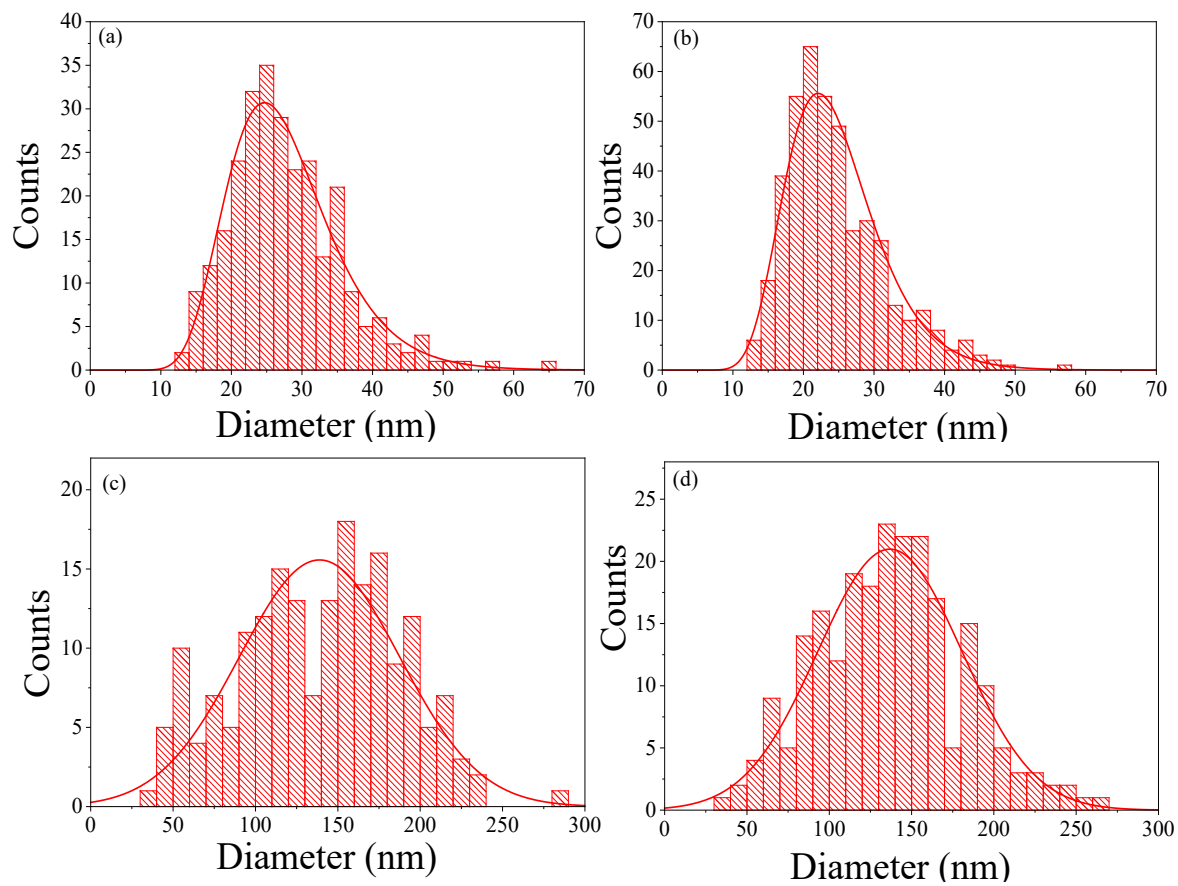
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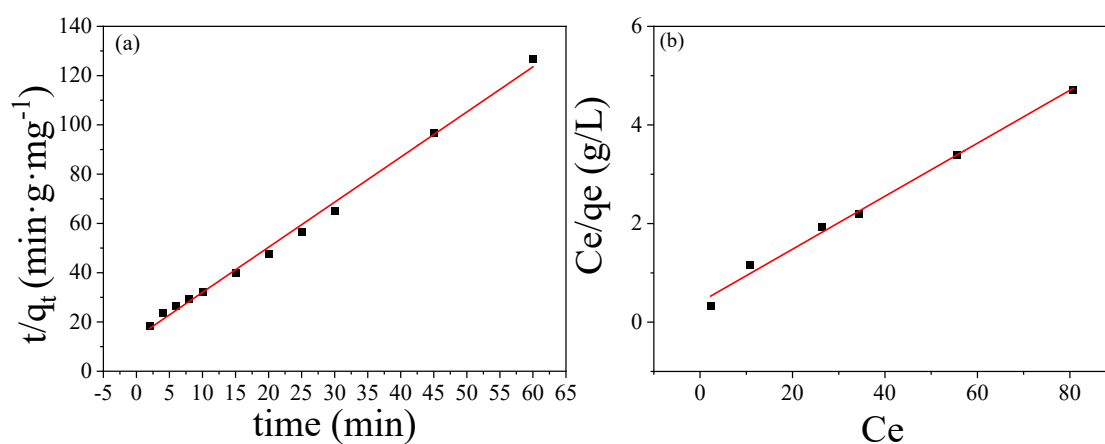
**Figure S1.** XRD patterns and Rietveld refinement of 20-MNP, (a) initial and (b) AC-treated; and 100-NMP (c) initial and (d) AC-treated. (o) Experimental, (—) calculated intensities and (—) difference between both intensities.



**Figure S2.** TEM histograms of the nanoparticle for 20-MNP, (a) initial and (b) AC-treated; and 100-NMP (c) initial and (d) AC-treated.

**Table S1:** Bloch law fitting parameters including the Curie-Weiss contribution.

<i>sample</i>	$M_0$ (emu/g)	$B$ (K <sup>-n</sup> )x10 <sup>-8</sup>	$n$	$C_H$ (emu/g K)	$\theta$ (K)
20-MNP	85.37±0.01	8.5±0.6	2.06±0.01	--	--
Treated 20-MNP	45.40±0.04	1.4±0.8	2.7±0.1	63±3	-18.6±0.9
100-MNP	88.17±0.01	7.0±1.0	2.43±0.03	--	--
Treated 100-MNP	80.95±0.03	1.3±0.3	1.90±0.02	18±2	-13±2



**Figure S3.** (a) Adsorption kinetics (*Pseudo-second-order model*) of Cr(VI) and (b) adsorption isotherms (*Langmuir model*) employing 20-MNP AC-treated sample.