Electronic Supplementary Material (ESI) for Environmental Science: Nano.

Electronic Supporting Information

Mesoporous Spinel $CoFe_2O_4$ as Efficient Adsorbent for Arsenite Removal from Water: High Efficiency *via* Control of Particle Assemblage Configuration

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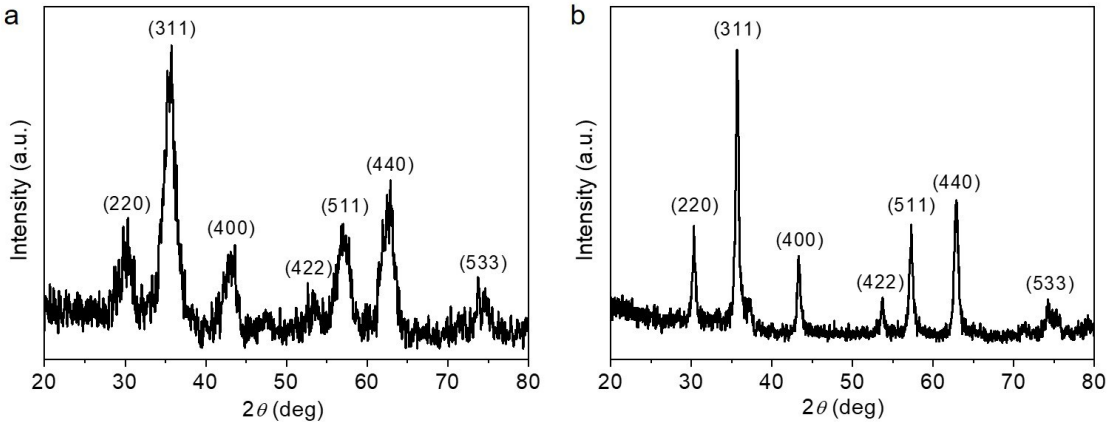

Figure S1. Powder XRD patterns of a) random $CoFe_2O_4$ NP aggregates ($CoFe_2O_4$ RNAs) and b) bulk-like $CoFe_2O_4$ microparticles.

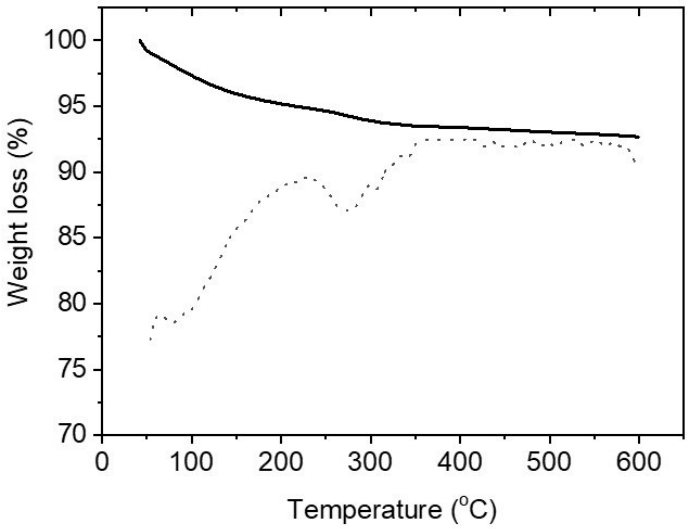

Figure S2. TGA profile of the $CoFe_2O_4$ MNAs sample recorded under air flow. The differential thermogravimetric (DTG) curve (dashed line) is also given.

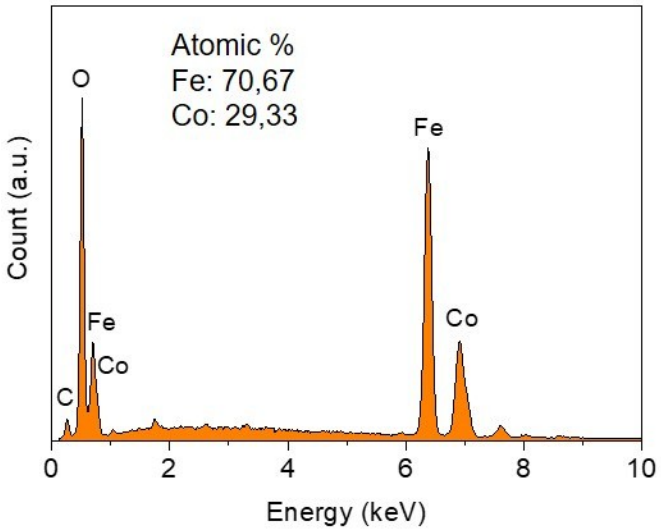

Figure S3. Typical EDS spectrum for the $CoFe_2O_4$ MNAs sample, indicating an Fe/Co atomic ration close to 2.4.

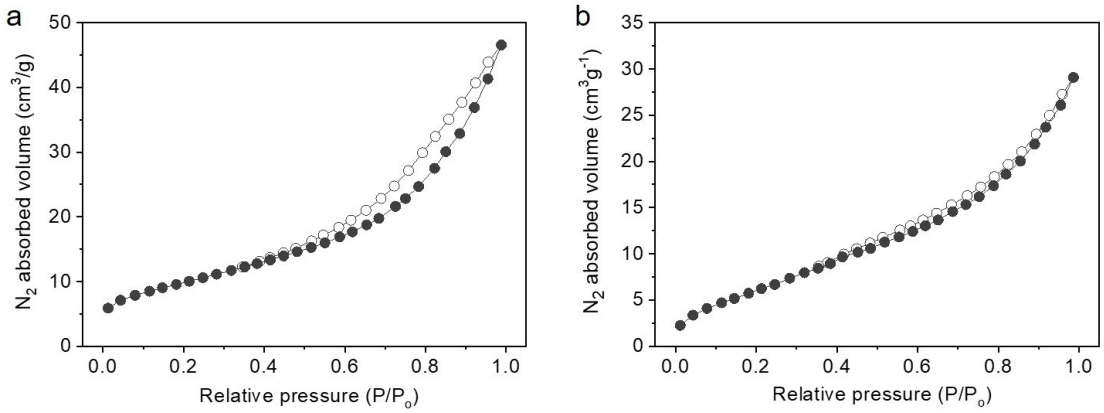

Figure S4. N_2 adsorption–desorption isotherms at -196 ^oC for the a) $CoFe_2O_4$ RNAs and b) bulk-like $CoFe_2O_4$ materials.

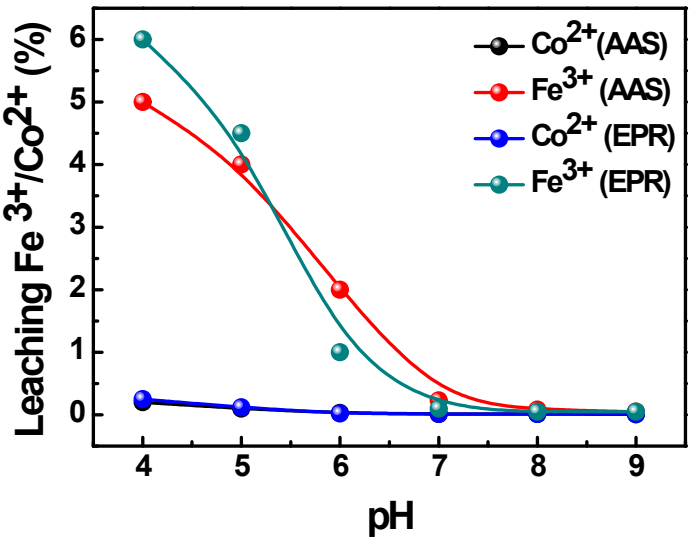

Figure S5. Metal ion concentrations leached out from (●)Co^{2+}(AAS), (●)Fe^{3+}(AAS), (●)Co^{2+}(EPR), (●)Fe^{3+}(EPR).

Table S1 Maximum As^{III} adsorption capacity (mg g^{-1}) at pH near neutral waters of some adsorbents reported in the literature

	Materials	As^{III} adsorption capacity (mg g^{-1})	References
1	gC_3N_4-rFe	76.5	12
2	orange juice residue with iron decorated	70.43	69
3	iron hydroxide coated alumina	7.64	70
4	hybrid (polymer, inorganic fibrous sorbent)	75.67	71
5	iron oxide coated cement (IOCC)	0.67	72
6	Fe(III) oxide –impregnated (GAC)	4.5	73
7	zero valent iron(ZVI)	19	12
8	hybrid polysulfone membrane with ZVI	26.8	66
9	Fe-nanoparticles on Starbon	26.6	11
10	$CoFe_2O_4$ @MIL-100(Fe)	143.6	68
11	$CoFe_2O_4$	100	67
12	$MnFe_2O_4$	94	67
13	$CoFe_2O_4$ MNAs	252.8	this work
14	$CoFe_2O_4$ RNAs	47.3	this work
15	$CoFe_2O_4$ microparticles	43.6	this work