

SUPPLEMENTARY MATERIAL TO
**Arsenic removal from water using a one-pot synthesized
low-cost mesoporous Fe–Mn-modified biosorbent**

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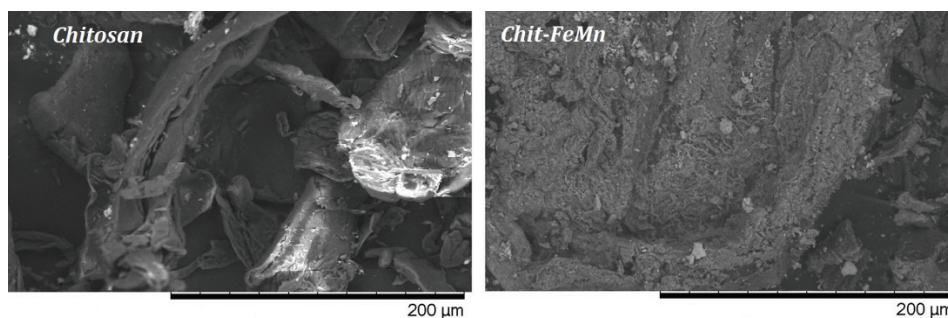


Fig. S-1. SEM images of Chit and Chit-FeMn.

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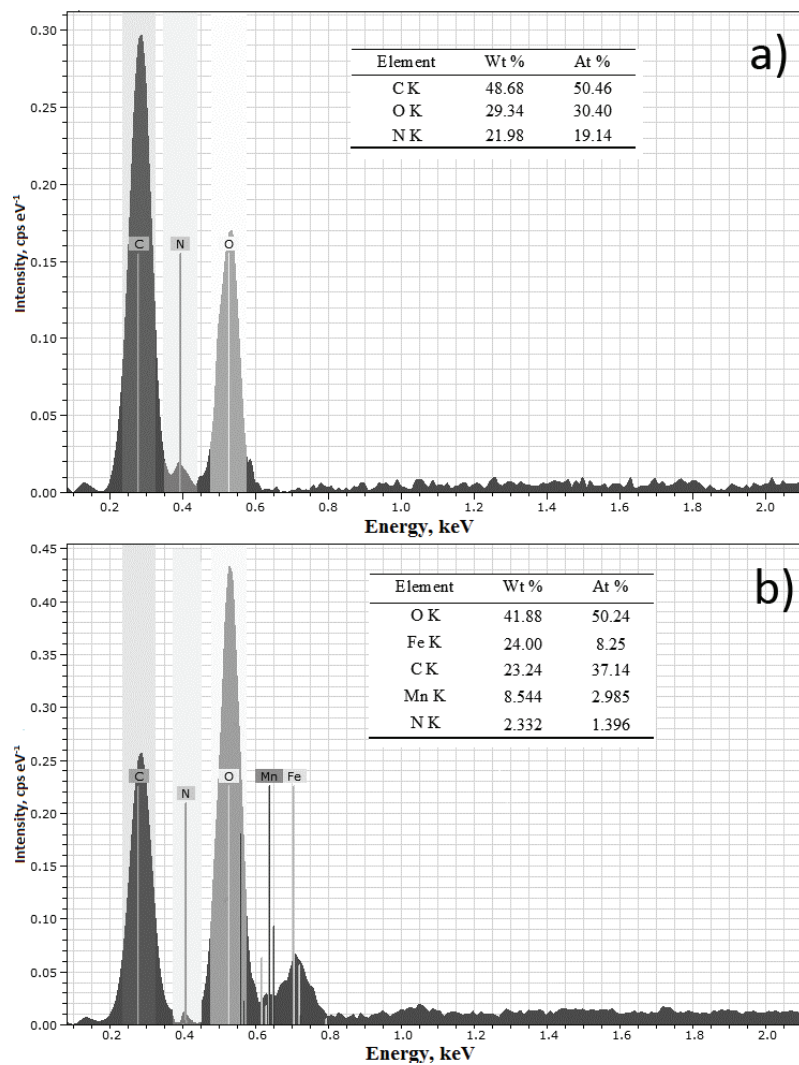


Fig. S-2. EDS analysis graph of Chit and Chit-FeMn.

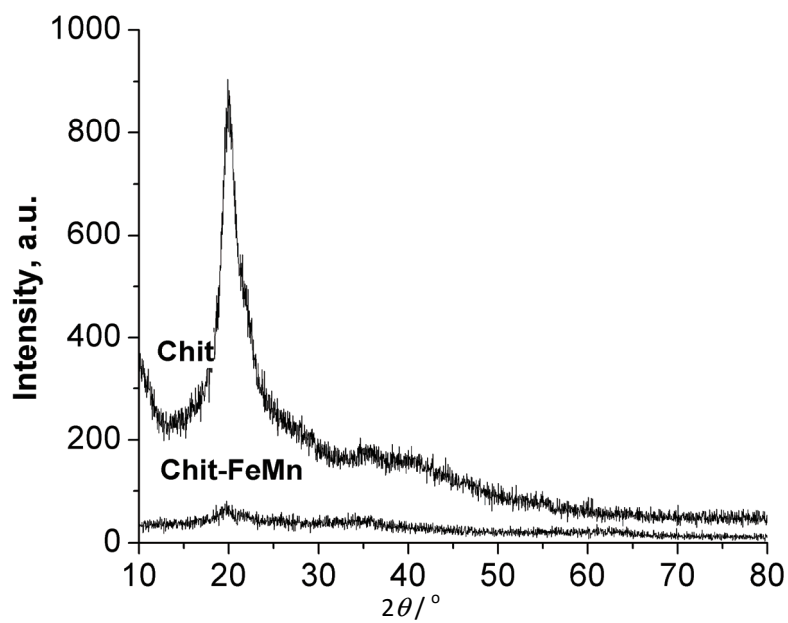


Fig. S-3. XRD patterns of Chit and Chit-FeMn.

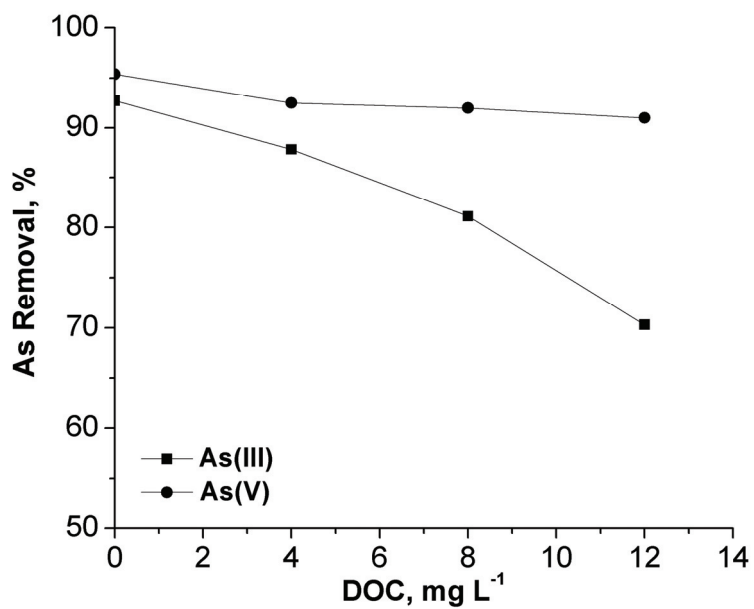
Fig. S-4. Effect of NOM on As(III) and As(V) removal by Chit-FeMn. Initial As concentration 0.5 mg L⁻¹, sorbent dose 0.5 g L⁻¹, pH 7.0±0.2.

TABLE S-I. Diffusion parameters for adsorption of As(III) and As(V) onto Chit and Chit-FeMn

Sorbent	Intra particle diffusion parameters			
	$K_i / \mu\text{g g}^{-1} \text{min}^{-0.5}$	$C_i / \mu\text{g g}^{-1}$	SSE	R^2
As(III)				
Chit	21.9 ^a	21.9	861	0.9826
	0.756 ^b	249	40	0.4880
Chit-FeMn	30.7 ^a	25.0	481	0.9932
	16.4 ^b	16.4	521	0.9794
	5.70 ^c	5.70	3.23	0.9918
As(V)				
Chit	9.94 ^a	427	477	0.9744
	0.206 ^b	617	17.9	0.9742
Chit-FeMn	46.1 ^a	134	2030	0.9656
	10.1 ^b	518	309	0.9681
	3.64 ^c	682	3.82	0.9938

^aFirst, ^bsecond and ^cthird linear regions

TABLE S-II. Characteristics of the contaminated groundwater

Parameter	Value	Unit
pH	8.27	
Conductivity	727	$\mu\text{S cm}^{-1}$
Hardness	165	mg L^{-1}
As concentration	35	$\mu\text{g L}^{-1}$
Fe concentration	0.213	mg L^{-1}
Mn concentration	0.016	mg L^{-1}
Phosphate concentration	0.391	mg L^{-1}
Sulfate concentration	41.02	mg L^{-1}
Nitrate concentration	0.169	mg L^{-1}
Chloride concentration	6.12	mg L^{-1}
DOC	5.54	mg L^{-1}
UV ₂₅₄ absorbance	0.209	cm^{-1}