Supporting information for

The oxidation and removal of As(III) from soil using a novel magnetic nanocomposite derived-biomass wastes

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Fabrication of BMN-loaded sponges: A piece of commercially available sponge (density of 0.018 g cm^{-3}, 60 pores per linear inch, Shanghai Caili Trade Co., Ltd.) was washed with distilled water and acetone several times and dried at 80 ℃. The sponge was then cut into small sponge particles (diameter of 2 mm). 10 mg sponge particles were dipped into BMN powder (80-100 mesh) to coat BMN particles to the sponge skeletons. Subsequently, the BMN-loaded sponges were immersed into a dilute solution of polydimethylsiloxane in toluene (0.25 mg mL^{-1}), and dried in an oven at 80 ℃ for 12 h.

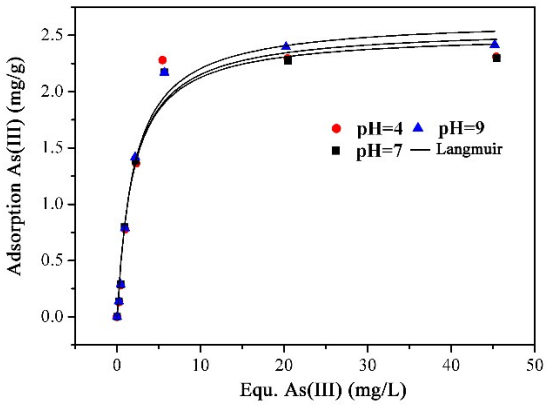

Figure S1. Adsorption isotherms of As(III) on the precursor at different pH (pH=4.0, 7.0 and 9.0).

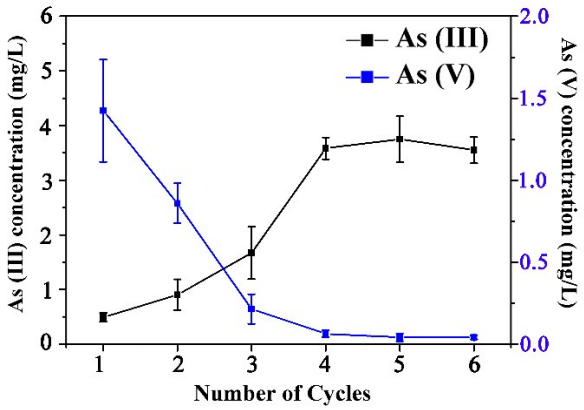

Figure S2. Influence of the recycling and reuse of BMN on the concentration of As(III) and As(V) in the desorption experiments.

Table S1. Langmuir and Freundlich models for As (III) adsorption isotherms

	Langmuir constants			Freundlich constants		
pH	Q_{max}(mg g^{-1})	b	R^2	K_f	n	R^2
4.0	15.605	0.0694	0.991	1.4696	2.4931	0.8477
7.0	16.223	0.0809	0.993	1.5343	2.4820	0.855
9.0	10.918	0.2115	0.983	1.4568	3.0572	0.9134

Table S2. Pseudo-second-order model for As(III) adsorption kinetics

Adsorbent/Adsorbate	C_0	Pseudo second order model		
		q_e (mg g^{-1})	K_2 (g $mg^{-1}min^{-1}$)	R^2
BMN/As(III)	5.0	1.0452	0.9155	0.9469
	10.0	1.5097	0.4388	0.9959
	15.0	2.2311	0.2009	0.9923
	20.0	3.2680	0.0936	0.9902