

Supporting information

Cerium oxide nanoparticles functionalized lignin as a nano-biosorbent for efficient phosphate removal

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Table S1

Table S1. The phosphate adsorption capacity of L-NH₂@Ce in comparison with some biosorbents

Biosorbents	Dosage (g L ⁻¹)	Temperature	Initial P concentration range (mg L ⁻¹)	pH	Adsorption capacities (mg g ⁻¹)	Equilibrium time (min)/ initial P concentration (mg L ⁻¹)	Ref.
L-NH ₂ @Ce	1.25	25	1.94–43.66	6.0 ± 0.2	27.86	60/10	This study
Ce/Fe ₃ O ₄ -BC	1.0	25	5.0-75.0	6.08	18.75	600/50	1
La/Fe ₃ O ₄ -BC	1.0	25	5.0-75.0	6.12	25	300/50	1
Fe-CL	1.25	45	~5.0	7	0.942	-	18
LBR-Zr	1.25	25	2-38	6.0±0.2	8.75	489/10	23
ILO	0.02	25	~25	3	4.785	1440/100	33
Fe-treated fiber	2.0	25	-	5.3 ± 0.3	4.30	-	34
HA-MNP	1.0	25	5-100	6.6	28.9	60/2	35
Iron hydroxide eggshell	7.5	45	7-140	7	14.49	220/14	45
SHEC-g-PAPTAC	1.0	50	50-160	5	46.9	45/100	46
PVA hydrogel beads	50	30	0-110	6	11.5	480/50	47
Ws-N-Zr	0.5	25	-	6.0±0.1	31.9	120/10	48
Al-eggshell	6.72	50	0.5-200	6.12	11.52	120/50	49