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Supplementary Materials

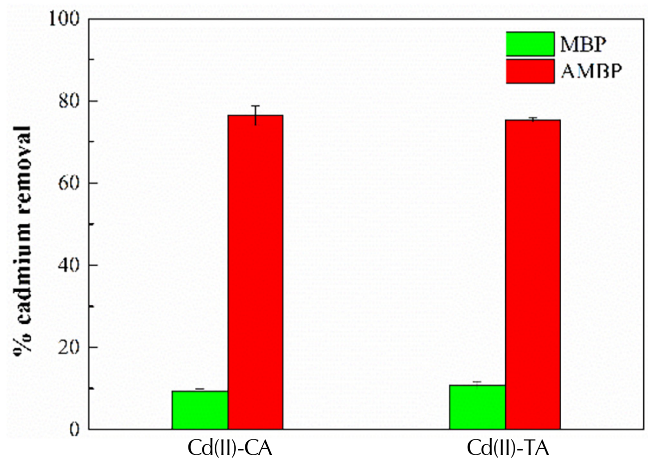

Fig. S1. Removal comparison of Cd(II)-CA and Cd(II)-TA between MBP and AMBP (initial Cd(II) concentration 30 mg/L, pH=6.0, the Cd(II)/ligand molar ratio=1:1).

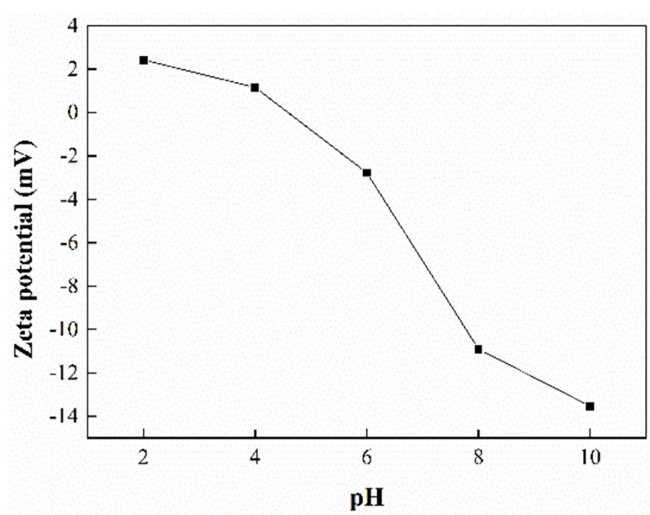

Fig. S2. Zeta potential of AMBP under different pH.

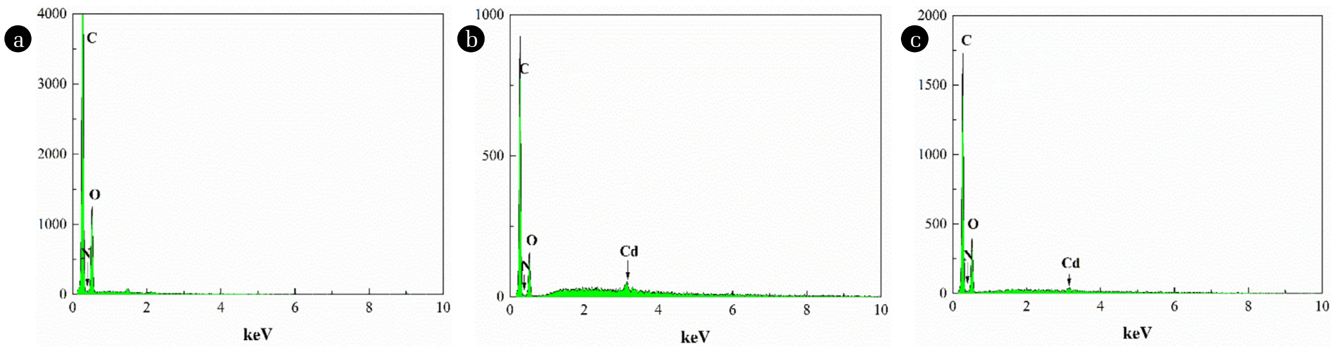

Fig. S3. EDS spectra of (a) AMBP, (b) AMBP after adsorption of Cd(II)-CA, and (c) AMBP after adsorption of Cd(II)-TA.

Table S1. The Elemental Analysis of the MBP, the Mercerized MBP, the EMBP, and the AMBP

Samples	Carbon (%)	Hydrogen (%)	Nitrogen (%)
MBP	46.59	6.34	0.3
mercerized MBP	45.26	6.39	0.14
EMBP	44.42	6.34	0.11
AMBP	46.99	6.65	0.9

Table S2. Surface Properties of MBP and AMBP

Samples	BET surface area (m^2/g)	mean pore diameter (nm)
MBP	0.253	59.83
AMBP	0.463	4.25

Table S3. Thermodynamic Parameters for the Adsorption of Cd(II)-CA and Cd(II)-TA by AMBP

Process	K_C			ΔG^0_{ads} (kJ·mol^{-1})			ΔH^0_{ads} (kJ·mol^{-1})	ΔS^0_{ads} (J·mol^{-1} K^{-1})
	278 K	298 K	318 K	278 K	298 K	318 K		
Cd(II)-CA	2.88	3.24	4.78	-2.445	-2.913	-4.136	132.87	599
Cd(II)-TA	2.19	3.01	4.38	-1.812	-2.730	-3.905	183.64	753

Table S4. % Removal of CA and TA by the AMBP

Process	Cd(II)/ligand molar ratio	ΔTOC (mg/L)	% removal of TOC
Cd(II)-CA	1:2	4.93	10.5
	1:1	4.62	19.3
	1:0.5	2.9	26.8
Cd(II)-TA	1:2	1.85	5.8
	1:1	1.36	8.5
	1:0.5	0.41	4.7

Table S5. Kinetic Parameters of the Cd (II) Complexes onto the AMBP

Process	Pseudo-first-order model		Pseudo-second order model		Intra-particle diffusion model		
	k_1(min^{-1})	R^2	k_2 (g·mg^{-1}·min^{-1})	R^2	K_p(mg·g·min$^{-1/2}$)	C	R^2
Cd (II)-CA	0.006	0.874	0.067	1	0.097	2.215	0.811
Cd (II)-TA	0.005	0.947	0.038	0.999	0.113	1.857	0.872

Table S6. Isotherm Parameters for the Cd (II) Complexes onto the AMBP

Process	Langmuir model			Freundlich model		
	K_L (L/mg)	q_{max} (mg/g)	R^2	K_f (mg/g)(L/mg)$^{-1/n}$	n	R^2
Cd (II)-CA	0.244	14.41	0.981	2.892	1.975	0.927
Cd (II)-TA	0.624	7.58	0.987	2.469	2.295	0.981