Adsorption Characteristics of Cd(II) in Aqueous Solutions using Spent Mushroom Substrate Biochars Produced at Different Pyrolysis Temperatures

Yang Xian[1], Jun Wu[1*], Gang Yang[1], Ruiting Liao[1], Xiaohong Zhang[1], Hong Peng[1], Xiaoyu Yu[1], Fei Shen[1], Li Li[1], Lilin Wang[1].

[1]*College of Environmental science, Sichuan Agricultural University, Chengdu 611130, P.R. China*

#Address correspondence to *Jun Wu, wuj1962@163.com*

Table S1 Main funcation groups observed for biochars.

Wave number(cm^{-1})	Funcation groups	Compounds
3200-3700	OH stretching	phenolic OH, aliphatic OH, methanol
1500-1650	C=C, C=O stretching	aromatic rings,carbonyl
1420-1480	CH bending	aliphatic
1360-1430	-OH, -CH bending	hydrocarbon, acid, phenol, olefin and alcohol
	O=C=O group	
	$-CH_3$ deformation	
1200-1300	C-O stretching	aryl-alkyl ether linkage, phenol
1000-1200	C=O stretching	ketone, ether, phenol, chain anhydride
	C-O-C stretching/bending,	
	C-N, R-O-C/R-O-CH3	
700-900	C-H	aromatic hydrogen
400-700	C-C stretch	
	C-O-H bending,	

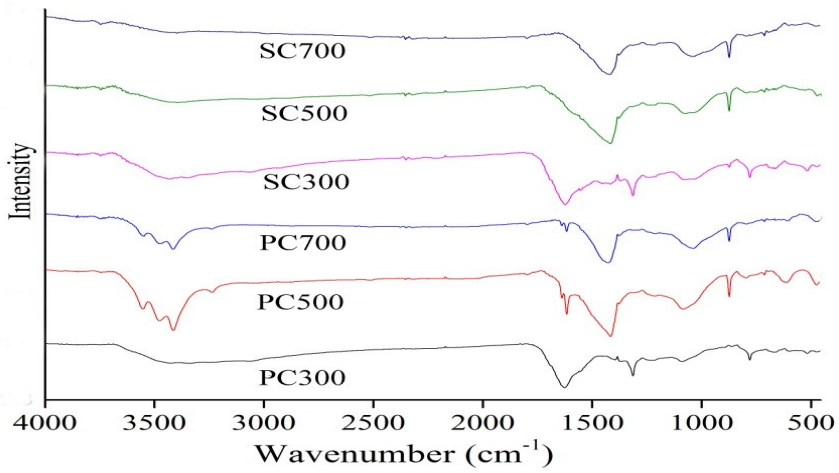

Fig. S1. FT-IR spectrum of the biochars.

Note: Spent *Pleurotus ostreatus* substrate biochar (PC) and spent *Shiitake* substrate biochar (SC).

Table S2 Comparison of adsorption capacities of different adsorbents for Cd used in different studies

Adsorbents	Sorption capacity (mg/g^{-1})	References
PHB	28.99	[1]
Ipomoea biochars	41.67–72.43	[2]
Modified rice straw biochar	81.10	[3]
Eichornia crassipes biochars	34-70.31	[4]
Maize cob biochar	33	[5]
Date palm biochars	26.96-43.58	[6]
Spent pleurotus ostreatus substrate biochars	40.14-71.49	This study
Spent shiitake substrate biochars	37.67-46.87	This study

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