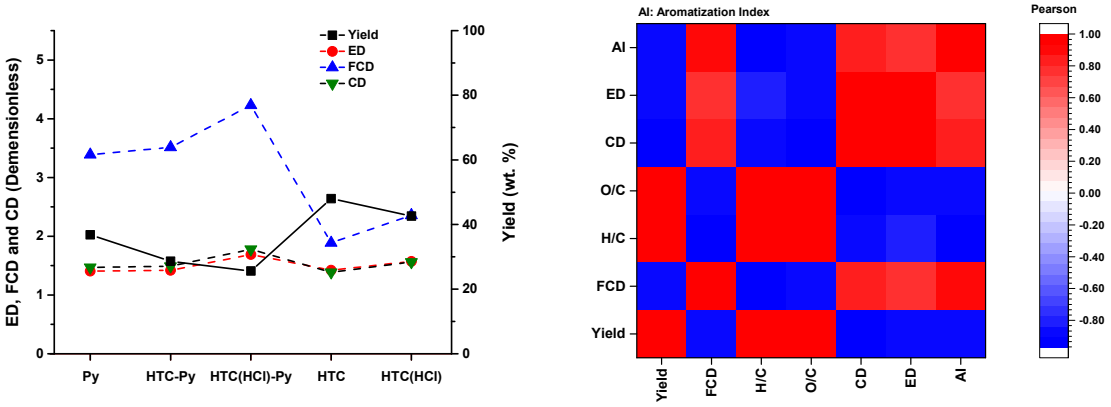
Supplementary Materials

Captions

Figure S1. Comparison of (a) densification, (b) correlation coefficient for biochar and hydrochar produced from swine manure.

Table S1. Residue characteristics in process water generated from the HTC of swine manure.

Table S2. Comparison of the peak area and aromatization index (A.I.) for biochar and hydrochar produced from swine manure.



(**a**) (**b**)

Figure S1. Comparison of (a) densification, (b) correlation coefficient for biochar and hydrochar produced from swine manure.

Table S1. Residue characteristics in process water generated from the HTC of swine manure.

Sample	TS (mg/L)[1]	FS (mg/L)[1]	VS (mg/L)[1]
HTC	36757	7400	29357
HTC(HCl)	55320	12590	42730

[1] TS (Total solids), FS (Fixed solids), and VS (Volatile solids) were measured according to EPA Method 160.4: Residue, Volatile (Gravimetric, Ignition at 550°C) by Muffle Furnace

Table S2. Comparison of the peak area and aromatization index (A.I.) for biochar and hydrochar produced from swine manure.

Sample	Peak Area (%·cm^{-1})						A.I. (%·cm^{-1})[2]
	O–H	C–H	C=O	C–O	OFGs[1]	Total	
Swine Manure	145.69	15.23	29.94	38.79	214.42	229.65	-
HTC	68.85	12.61	29.40	17.01	115.26	127.87	0.6345
HTC(HCl)	19.35	3.59	2.59	2.05	23.99	27.58	1.7400
HTC-Py	13.14	0.64	6.94	14.01	34.09	34.72	1.8362
HTC(HCl)-Py	11.31	0.30	3.93	0.56	15.79	16.10	1.9238
Py(Commercial)	21.08	1.01	4.66	5.65	31.38	32.39	1.8296

[1] OFGs (Oxygen-containing functional groups) were calculated as the sum of the peak areas of O-H, C=O, and C-O.

[2] A.I. (Aromatization index) was calculated based on the initial and final values of the OFGs and C-H peak areas.