

Supplementary Information for “Synergistic hydrothermal treatment of food waste digestate residues and incineration fly ash: dehydration performance and heavy metals safety”

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These contents include 3 tables and 3 figures.

Table 1 Key parameters of DR and FA

Sample	Proximate analysis (wt.%)			Ultimate analysis (wt.%)						
	Ash	VM ^a	FC ^b	C	H	N	S	O	H/C	N/C
DR	53.17	45.25	1.58	17.57	2.43	2.37	1.19	23.27	1.66	0.12
FA	89.50	8.98	1.52	2.21	0.04	0.30	3.30	4.65	0.22	0.11
	Na	Mg	Al	Si	P	Cl	K	Ca		
DR	0.43	1.34	0.68	1.02	2.07	0.78	0.23	26.10		
FA	4.90	0.64	0.31	2.27	0.10	25.84	2.32	26.36		

VM^a, Volatile matter; FC^b, Fixed carbon.

Table 2 Indices of potential ecological risk assessment

C_f	Metal contamination	E_r	Potential ecological risk	RI	contamination
$C_f \leq 1$	Clean	$E_r \leq 40$	Low	$RI \leq 150$	Low
$1 < C_f \leq 3$	Low	$40 < E_r \leq 80$	Moderate	$150 < RI \leq 300$	Moderate
$3 < C_f \leq 6$	Moderate	$80 < E_r \leq 160$	Considerate	$300 < RI \leq 600$	Considerate
$6 < C_f \leq 9$	Considerate	$160 < E_r \leq 320$	High	$RI > 600$	High
$C_f > 9$	High	$E_r > 320$	Very high		

Table 3 Total concentrations of HMs in the raw materials and HTT samples

Sample	Heavy metals (mg/kg)				
	Cr	Cu	As	Cd	Pb
FA	454.68±11.77	809.25±12.37	48.12±0.75	187.90±0.14	1407.25±3.89
FAH	517.50±17.68	879.00±16.97	61.78±3.22	276.48±27.33	1413.00±60.81
DRC	76.95±0.35	71.13±0.39	16.08±0.07	2.60±0.06	23.82±0.11
DFC100	106.25±0.14	142.08±3.71	18.37±0.11	6.91±0.24	57.65±2.33
DFC95	152.03±9.02	290.80±10.75	23.91±1.02	52.02±3.08	327.35±17.75
DFC90	189.23±13.19	322.93±62.81	25.43±2.64	53.48±4.70	344.78±30.30
DFC85	228.60±17.61	479.18±28.81	31.69±1.52	104.58±5.62	622.50±34.65

Figures

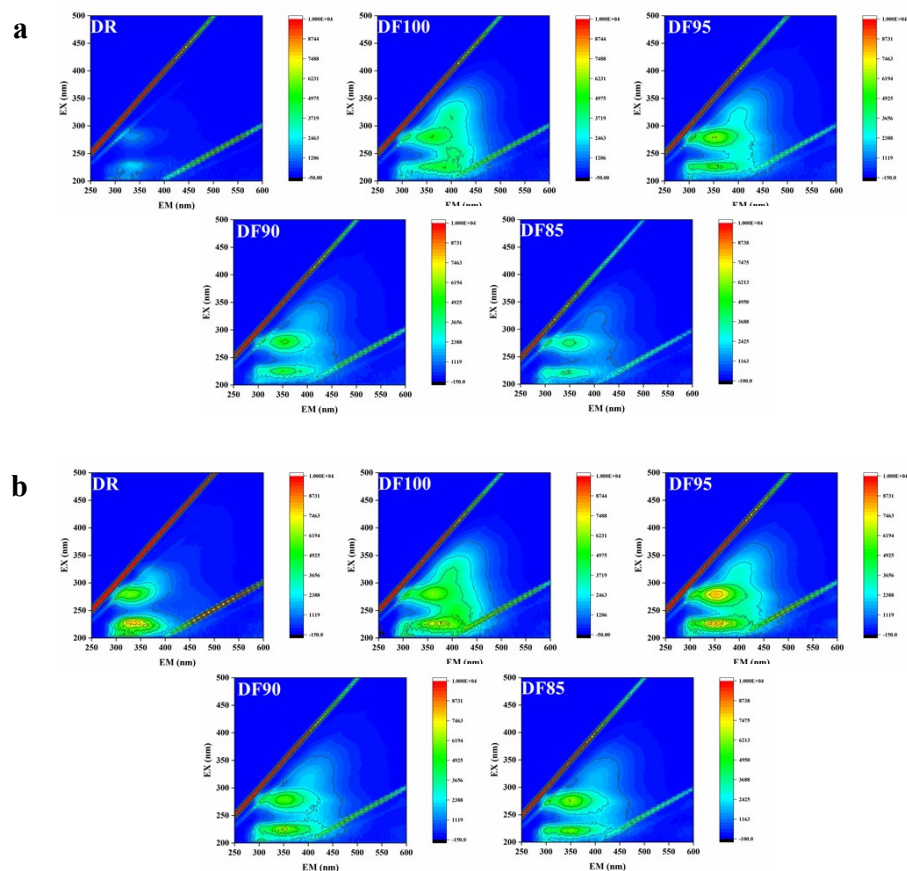


Fig. 1 EEM analysis of LB-EPS (a) and TB-EPS (b) showing the fluorescence of DR and DFs.

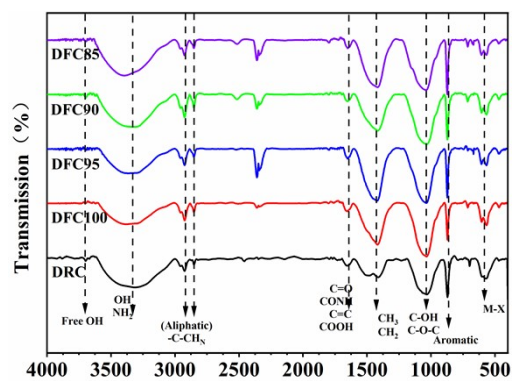


Fig. 2 Fourier transform infrared spectra of DRC and DFCs.

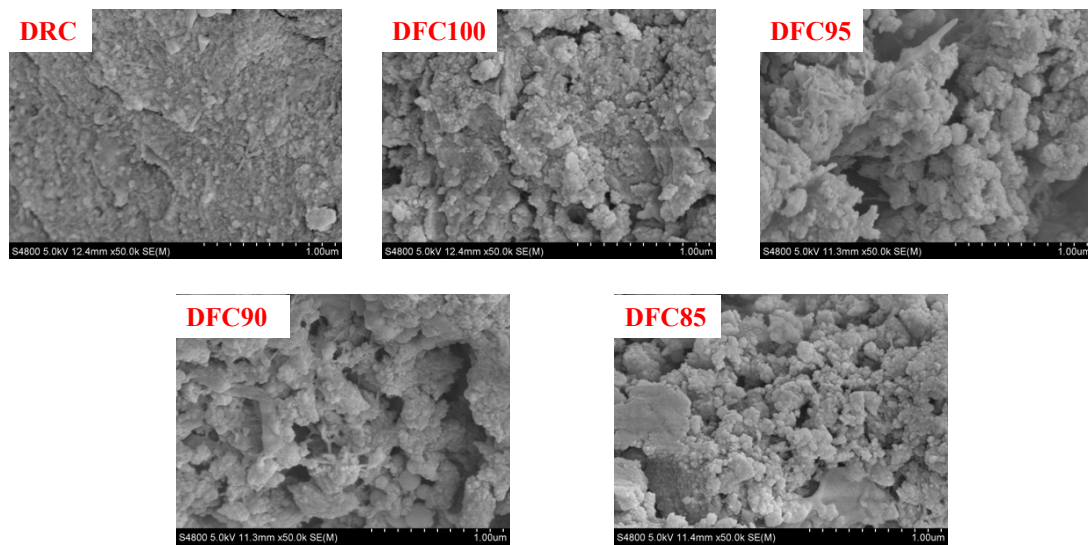


Fig. 3 SEM micrographs showing the surface morphology of DRC and DFCs.
