

Comparison of Pyrolysis Liquids from Continuous and Batch Biochar Production – Influence of Feedstock Evidenced by FTICR MS

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Table S1. Composition of bio-oil samples analysed by ESI (+/-) and APPI (+) FTICR MS with feature number and corresponding percentages per heteroatom class. SWP: softwood pellets; WSP: wheat straw pellets; 550 and 700 refer to the pyrolysis temperatures; III: pilot-scale unit. NOTE: in ESI (+), the compounds are observed in the form of protonated and sodium adducts. As part of this table, if one compound was observed in both configurations only one was considered.

Samples	ESI (-)								ESI (+)			
	CHO		CHON		CHOS		CHOB		CHO		CHON	
	feature #	%	feature #	%	feature #	%	feature #	%	feature #	%	feature #	%
SWP550-1	995	58.74%	8	0.47%	391	23.08%	300	17.71%	1977	52.66%	1777	47.34%
SWP550-2	1010	55.74%	11	0.61%	460	25.39%	331	18.27%	2197	59.30%	1508	40.70%
SWP700-1	924	60.39%	9	0.59%	305	19.93%	292	19.08%	2442	59.03%	1695	40.97%
SWP700-2	905	67.34%	8	0.60%	135	10.04%	296	22.02%	2413	61.45%	1514	38.55%
WSP550-1	859	48.45%	266	15.00%	329	18.56%	319	17.99%	1644	42.94%	2185	57.06%
WSP550-2	992	51.96%	296	15.51%	256	13.41%	365	19.12%	2112	40.67%	3081	59.33%
WSP700-1	912	48.98%	328	17.62%	264	14.18%	358	19.23%	2043	38.94%	3203	61.06%
WSP700-2	1058	52.27%	370	18.28%	278	13.74%	318	15.71%	2027	38.48%	3241	61.52%
SWP550-III	994	69.17%	5	0.35%	100	6.96%	338	23.52%	1948	59.26%	1339	40.74%
WSP550-III	754	30.78%	1468	59.92%	121	4.94%	107	4.37%	1107	47.11%	1243	52.89%

Samples	APPI (+)									
	CH		CHO		CHN		CHON		CHOS	
	feature #	%	feature #	%	feature #	%	feature #	%	feature #	%
SWP550-1	13	0.27%	2599	53.24%	243	4.98%	1987	40.70%	40	0.82%
SWP550-2	15	0.30%	2412	48.20%	299	5.98%	2215	44.26%	63	1.26%
SWP700-1	15	0.34%	2438	55.94%	202	4.64%	1664	38.18%	39	0.89%
SWP700-2	21	0.41%	2849	55.62%	247	4.82%	1962	38.31%	43	0.84%
WSP550-1	13	0.28%	1199	26.26%	160	3.50%	3134	68.64%	60	1.31%
WSP550-2	17	0.32%	1557	28.99%	218	4.06%	3456	64.35%	123	2.29%
WSP700-1	12	0.24%	1244	25.07%	166	3.35%	3449	69.51%	91	1.83%
WSP700-2	68	1.24%	1615	29.39%	206	3.75%	3386	61.62%	220	4.00%
SWP550-III	53	0.93%	2603	45.53%	250	4.37%	2683	46.93%	128	2.24%
WSP550-III	132	2.81%	815	17.38%	184	3.92%	3527	75.20%	32	0.68%

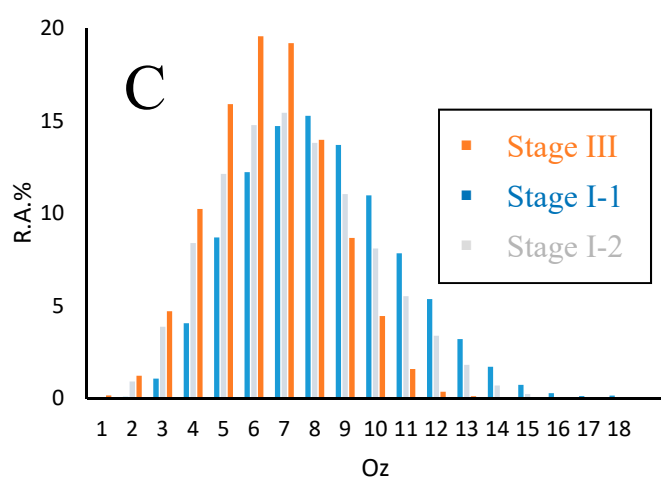
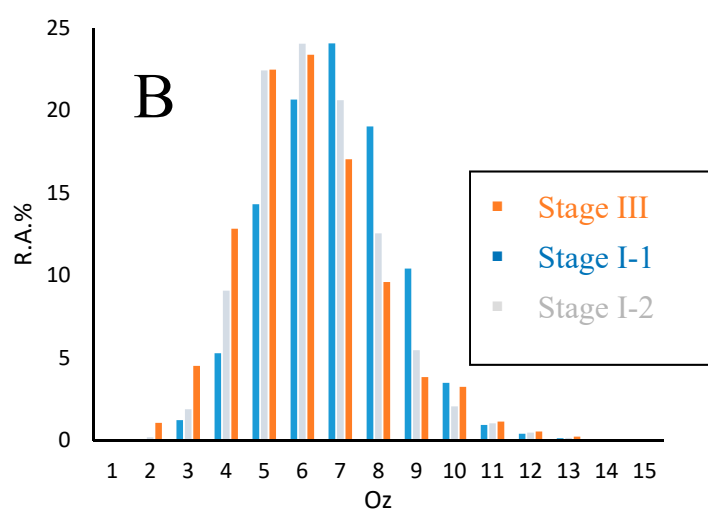
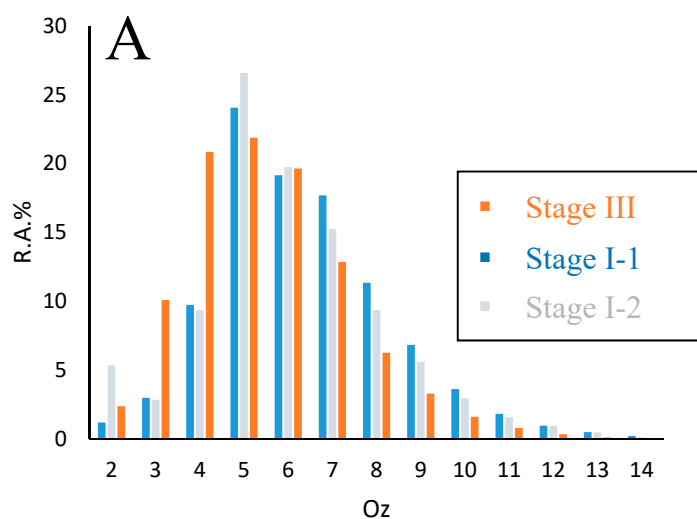


Figure S1. Analysis of pyrolysis liquids derived from softwood pellets produced at 550°C. Oxygen atom number distribution of compounds type $C_xH_yO_z$ in three ionization modes for three samples produced under the same conditions, two being produced in the batch unit unit (Stage I) and one in the continuous unit (Stage III) with (A) ESI (-), (B) ESI (+) and (C) APPI (+).

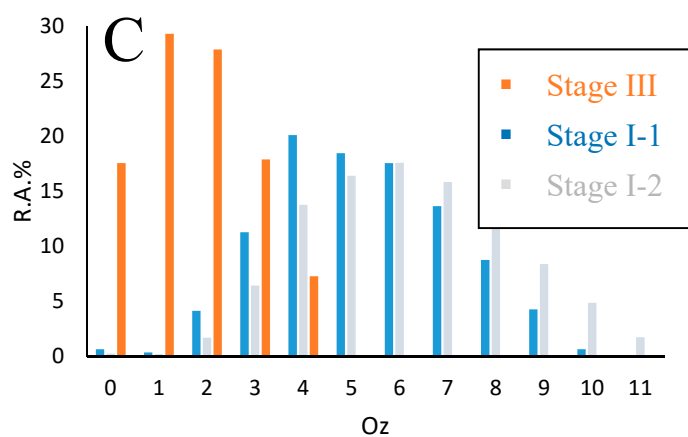
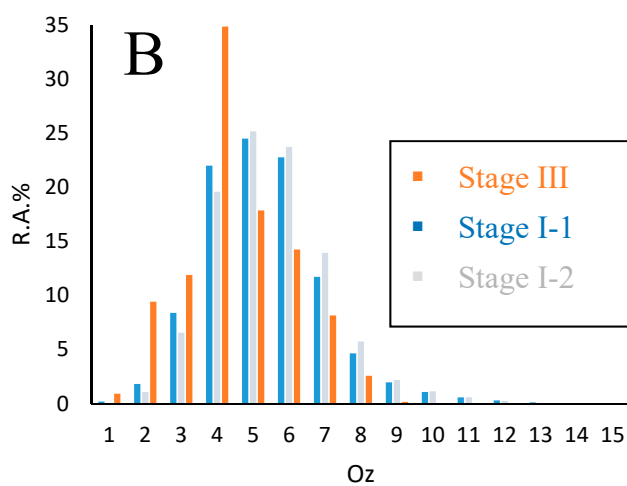
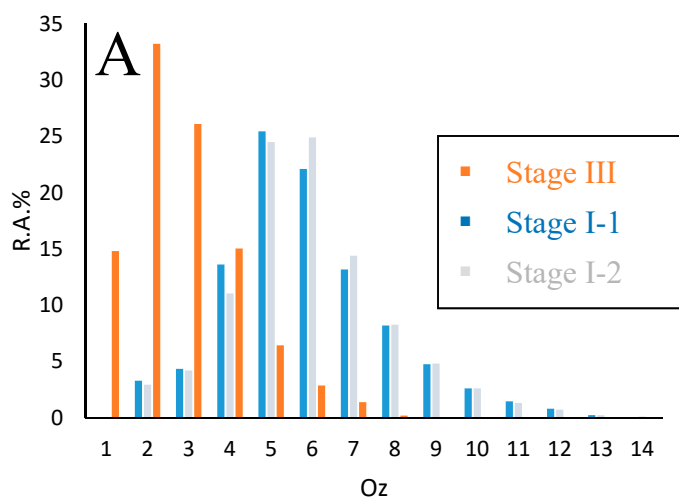


Figure S2. Analysis of pyrolysis liquids derived from wheat straw pellets produced at 550°C. Oxygen atom number distribution of compounds type $C_xH_yO_z$ in three ionization modes for three samples produced under the same conditions, two being produced in the batch unit unit (Stage I) and one in the continuous unit (Stage III) with (A) ESI (-), (B) ESI (+) and (C) APPI (+).