

Supplementary Material

Variability in pyrogenic carbon properties generated by different burning temperatures and peatland plant litters: implication for identifying fire intensity and fuel types

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Table S1. Assignment of the selected principal descriptive IR absorption bands

Wave number	Vibration	Characterization	Reference
1030-1080	Combination of C–O stretching and O–H deformation	Polysaccharides	(Grube et al., 2006)
1425	Symmetric C-O stretching from COO- or stretching and OH deformation (COOH)	Carboxylate/carboxylic structures (humic acids)	(Artz et al., 2008)
1515	Aromatic C=C stretching	Lignin/phenolic backbone	(Cocozza et al., 2003)
1625	Aromatic C=C stretching and/or asymmetric C-O stretching in COO-	Lignin and other aromatics, or aromatic or aliphatic carboxylates	(Cocozza et al., 2003)
1720	C=O stretching of COOH or COOR	Carboxylic acids, aromatic esters	(Cocozza et al., 2003)
3437	Vibrations of H-bonded hydroxyl O-H in phenols	Cellulose	(Cocozza et al., 2003; Verchot et al., 2011)

Table S2. Q1, Q2, Q3, T50, and R50 in low-temperature and high-temperature residual PyC for each plant.

Plant types	Low temperature					High temperature				
	Q1	Q2	Q3	T50	R50	Q1	Q2	Q3	T50	R50
Shrubs										
<i>Vaccinium uliginosum</i>	32.84	40.48	22.95	419.2	0.509	3.92	30.38	48.39	496.4	0.603
<i>Lonicera</i>	29.76	33.44	23.92	437.4	0.531	3.97	25.33	29.00	511.8	0.622
<i>Ledum palustre L.</i>	39.23	45.40	14.58	404.9	0.492	9.43	40.79	24.87	466.1	0.566
<i>Betula ovalifolia</i>	30.20	40.49	24.39	430.7	0.523	8.91	50.34	17.89	455.5	0.553
<i>Betula fruticosa</i>	30.98	41.77	22.36	425.4	0.517	3.63	33.20	37.68	493.3	0.599
<i>Salix rosmarinifolia</i>	27.25	26.59	29.98	449.9	0.547	4.59	26.04	28.18	510.5	0.620
<i>Rhododendron spp.</i>	32.01	38.58	25.76	427.0	0.519	3.89	34.18	37.92	486.6	0.591
Herbs										
<i>Carex spp.</i>	32.61	38.59	20.53	420.7	0.511	5.12	38.78	37.96	477.5	0.580
<i>Typha orientalis</i>	35.64	38.60	15.39	411.2	0.500	1.76	30.57	29.52	498.0	0.605
<i>Calamagrostis epigeios</i>	36.62	37.08	21.07	413.3	0.502	3.83	27.26	37.66	503.9	0.612
<i>Carex appendiculata</i>	30.41	35.89	14.81	436.3	0.530	9.05	41.29	11.37	466.1	0.566
<i>Eriophorum vaginatum</i>	38.51	40.14	17.44	404.1	0.491	5.31	30.99	41.20	492.0	0.598
<i>Deyeuxia angustifolia</i>	33.13	36.70	17.57	421.3	0.512	5.79	26.38	25.34	512.0	0.622
<i>Glyceria angustifolia</i>	33.83	34.01	21.86	423.2	0.514	7.08	30.78	15.67	495.7	0.602

Reference:

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