

## Supporting Information

### Lignin Valorization through Thermochemical Conversion: Comparison of Hardwood, Softwood and Herbaceous Lignin

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Table S1. Proximate and elemental analyses of corn stover, red oak, and loblolly pine lignin.

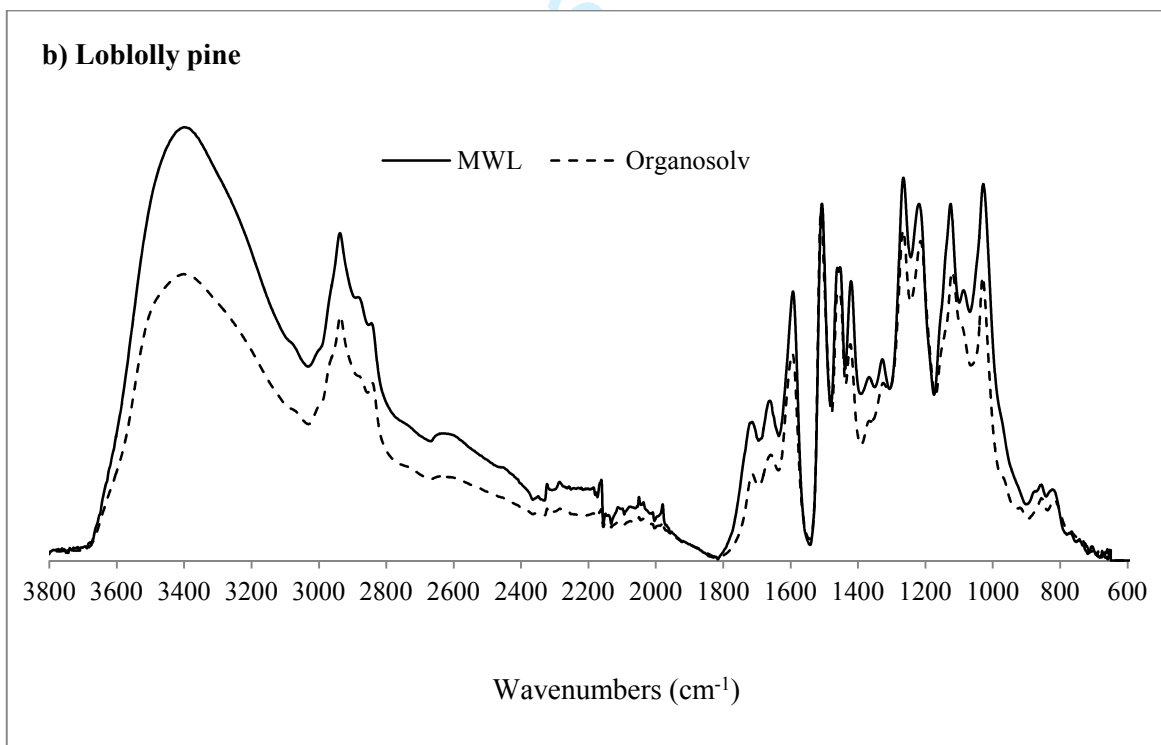
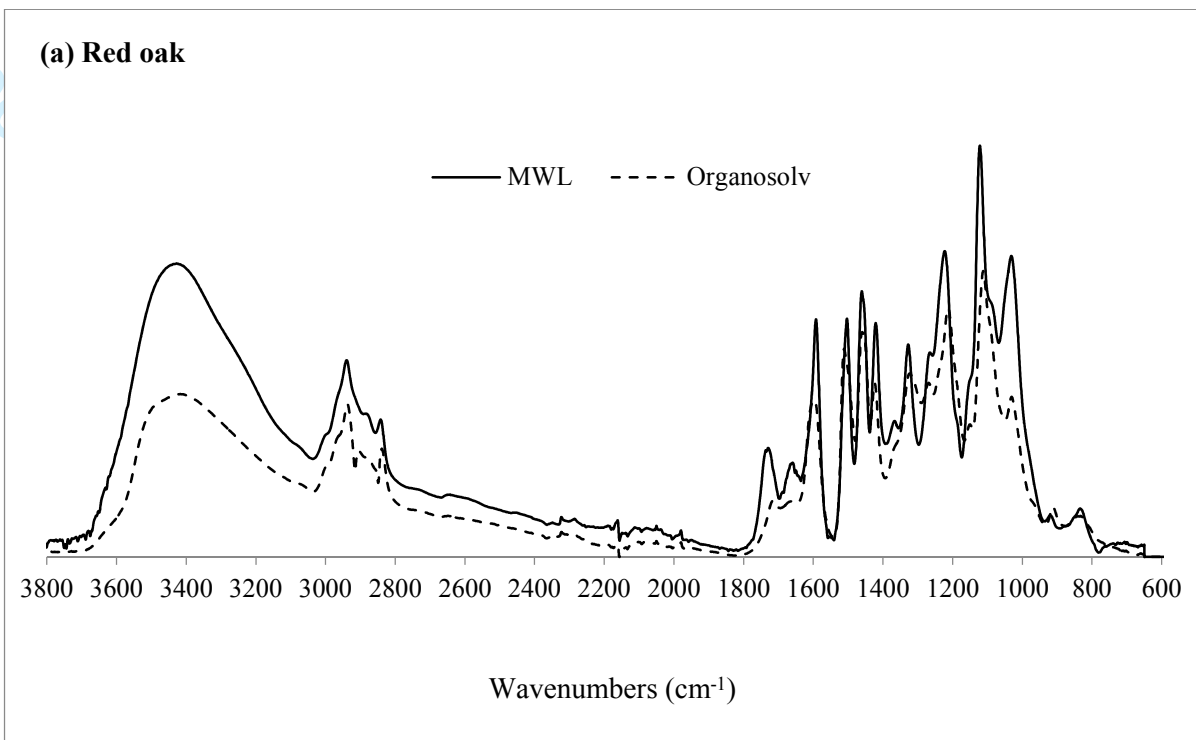
Feedstock Isolation method	Red oak		Loblolly pine		Corn stover	
	MWL	Organosolv	MWL	Organosolv	MWL	Organosolv
<i>Proximate<sup>a</sup> (wt %)</i>						
Volatile	72.21	56.51	64.69	61.06	71.08	66.81
Fixed Carbon	27.22	41.75	34.65	38.44	28.61	32.35
Ashes	0.57	1.75	0.66	0.50	0.32	0.84
<i>Elemental (wt %)</i>						
N	0.37	0.14	0.19	0.31	0.47	0.82
C	58.88	68.16	61.80	68.66	60.30	67.38
H	4.59	4.89	4.78	4.91	4.57	4.72
S	0.08	0.05	0.03	0.05	0.04	0.21
O <sup>b</sup>	36.08	26.76	33.19	26.06	34.61	26.87

<sup>a</sup> Dry and ash free basis

<sup>b</sup> Oxygen determined by difference

Table S2. GPC analysis of red oak, loblolly pine and corn stover lignin.

<b>Lignin</b>	<b>Isolation method</b>	$M_w$ (Da)	$M_n$ (Da)	<b>Polydispersity Index (PDI)</b>
Red oak	Milled	5364	2749	1.96
	Organosolv	1769	1164	1.52
Loblolly pine	Milled	4659	2150	2.18
	Organosolv	1803	1139	1.59
Corn stover	Milled	3859	2524	1.53
	Organosolv	1937	1207	1.61



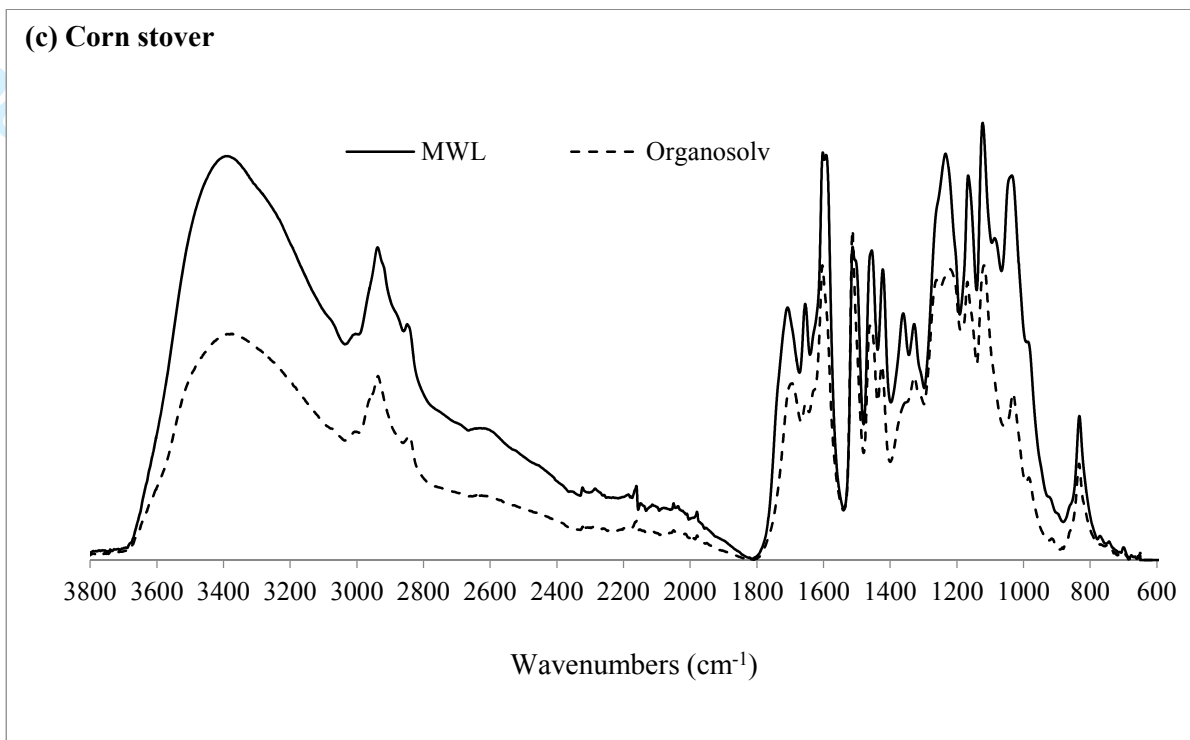


Figure S1. FTIR spectrum of MWL and organosolv lignin derived from (a) red oak, (b) loblolly pine and (c) corn stover.

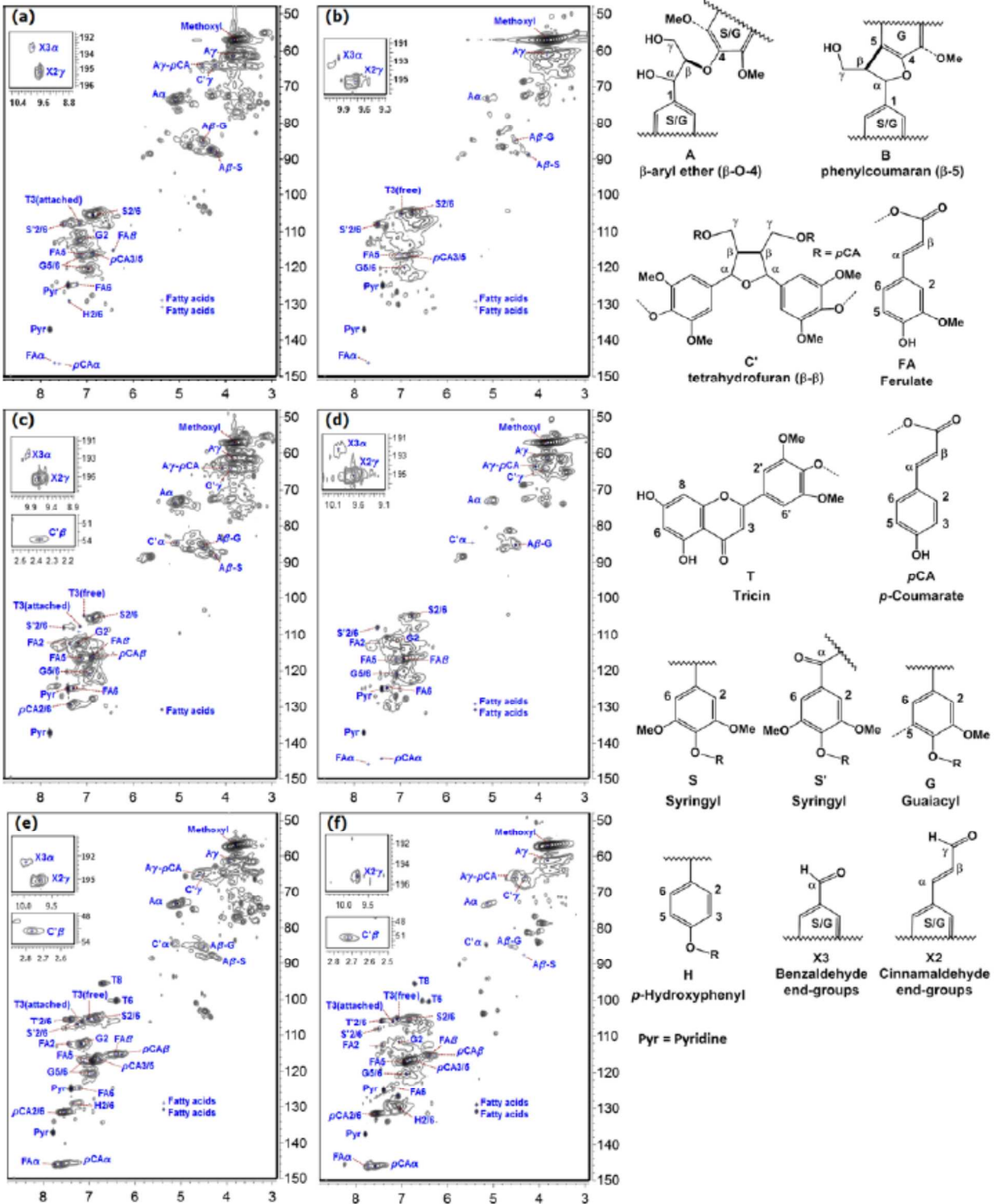


Figure S2. 2D-HSQC-NMR spectrum of different types of lignin in DMSO- $d_6$  : pyridine- $d_5$  (4:1, v:v). (a) Red oak MWL, (b) Red oak organosolv lignin, (c) Loblolly pine MWL, (d) Loblolly pine organosolv lignin, (e) Corn stover MWL, (f) Corn stover organosolv lignin