

Supporting information

Complete conversion of bleached Kraft pulp into dissolving pulp and two xylo-oligosaccharides through a deep eutectic solvent assisted biorefinery

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Three figs (Fig S1, S2 and S3)

One table (Table S1)

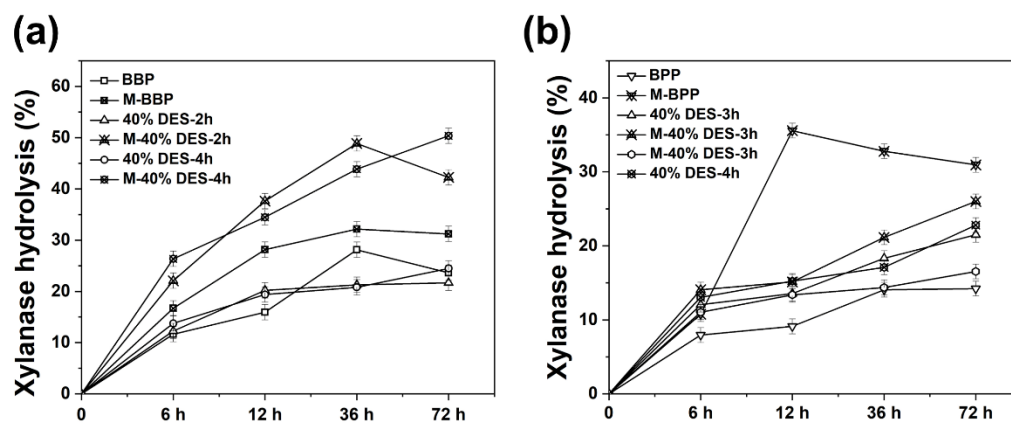


Fig. S1. (a), (b) the enzymatic efficiency of BBP and BPP before and after mechanical refining at 2% (w/v) solids load and 5 mg g⁻¹ xylanase respectively.

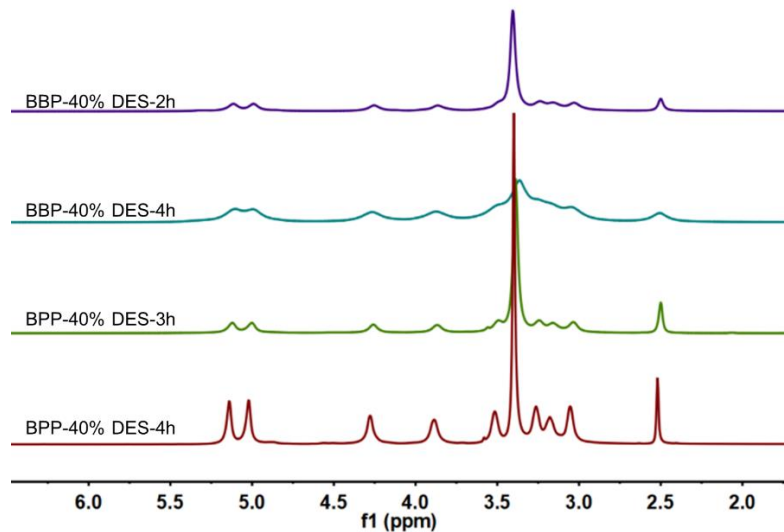


Fig. S2. ¹H NMR spectra of BBP and BPP under two DES pretreatment conditions.

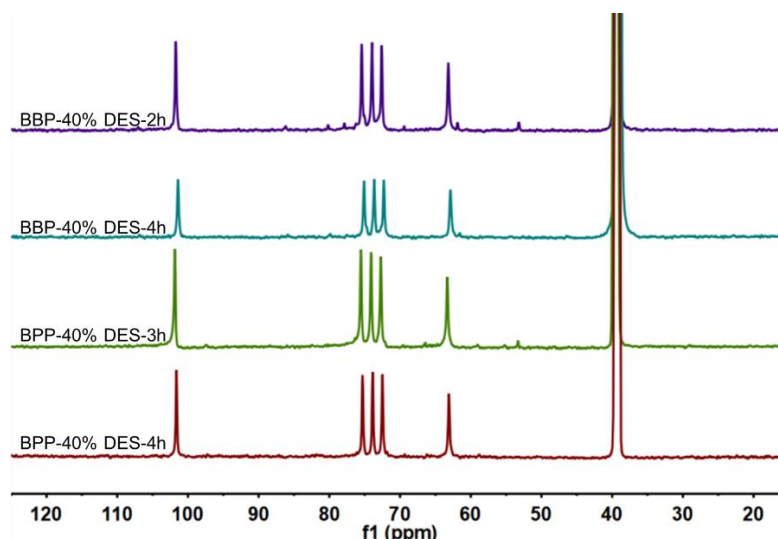


Fig. S3. ^{13}C NMR spectra of BBP and BPP under two DES pretreatment conditions.

Table S1. Assignment of main ^{13}C - ^1H cross-signals in HSQC spectra of these DES oligosaccharides.

label	$\delta_{\text{C}}/\delta_{\text{H}}$ (ppm)	assignment
X_{α}	92.0/5.10	$\text{C}_1\text{-H}_1$ in alpha-xylose
X_{β}	96.5/4.50	$\text{C}_1\text{-H}_1$ in beta-xylose
Xi, Xt	101.4-101.8/4.38-4.49	$\text{C}_1\text{-H}_1$ in xylose and non-reducing end groups
Xi	72.7/3.19	$\text{C}_2\text{-H}_2$ in hemicellulose inter chain xylose
	73.6/3.47	$\text{C}_3\text{-H}_3$ in hemicellulose inter chain xylose
	76.4/3.71	$\text{C}_4\text{-H}_4$ in hemicellulose inter chain xylose
	63.0/3.32/4.04	$\text{C}_5\text{-H}_5$ in hemicellulose inter chain xylose
	75.6/3.38	$\text{C}_3\text{-H}_3$ in non-reducing end groups
Xt	69.2/3.55	$\text{C}_4\text{-H}_4$ in non-reducing end groups
	65.2/3.22/3.88	$\text{C}_5\text{-H}_5$ in non-reducing end groups
At	107.6/5.31	$\text{C}_1\text{-H}_1$ in L-arabinose
	80.7/4.07	$\text{C}_2\text{-H}_2$ in L-arabinose
	77.2/3.85	$\text{C}_3\text{-H}_3$ in L-arabinose
	84.8/4.21	$\text{C}_4\text{-H}_4$ in L-arabinose
	61.3/3.70/3.72	$\text{C}_5\text{-H}_5$ in L-arabinose
UA	97.5/5.20	$\text{C}_1\text{-H}_1$ in 4-O-methyl- α -D-glucuronide groups
	72.2/3.54	$\text{C}_2\text{-H}_2$ in 4-O-methyl- α -D-glucuronide groups
	73.3/3.71	$\text{C}_3\text{-H}_3$ in 4-O-methyl- α -D-glucuronide groups
	82.4/3.17	$\text{C}_4\text{-H}_4$ in 4-O-methyl- α -D-glucuronide groups
	71.4/4.27	$\text{C}_5\text{-H}_5$ in 4-O-methyl- α -D-glucuronide groups
	59.8/3.38	OCH_3