

## SUPPLEMENTARY INFORMATION.

### A cyclic process for full enzymatic saccharification of pretreated cellulose with full recovery and reuse of the ionic liquid 1-butyl-3-methylimidazolium chloride.

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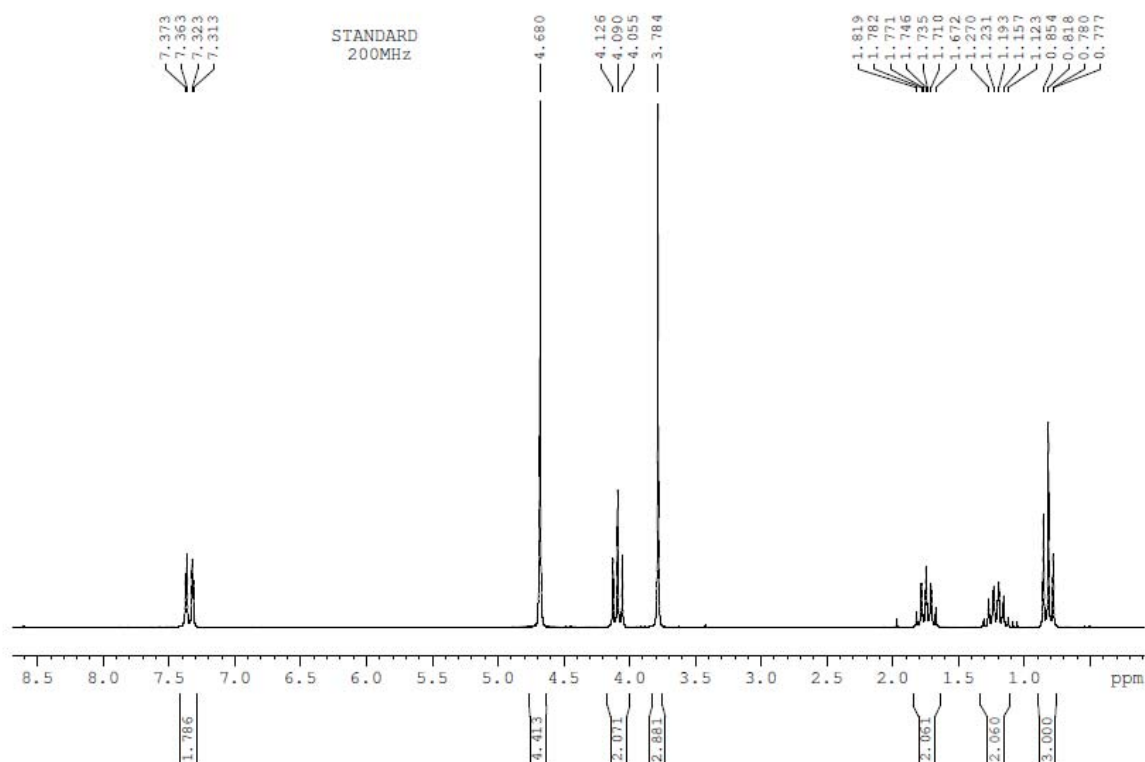
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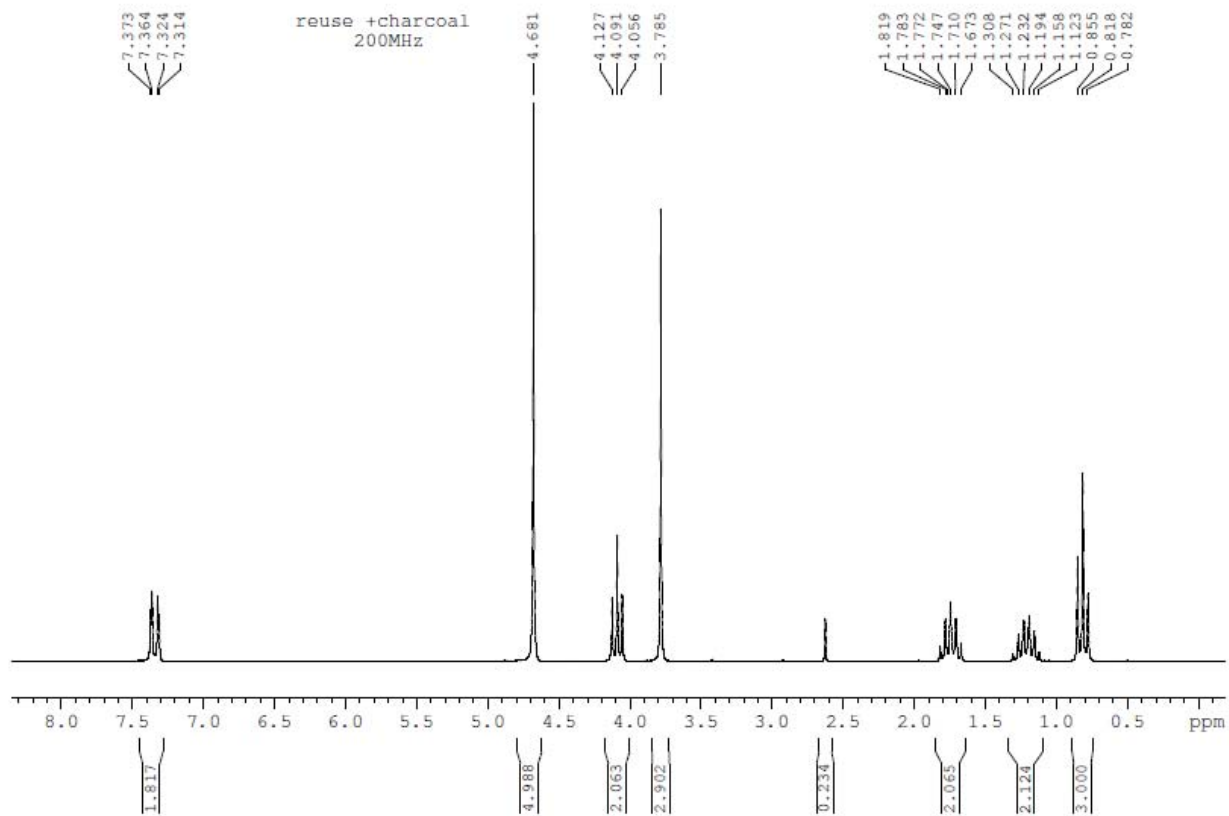
#### NMR analysis of [Bmim][Cl]

<sup>1</sup>H-NMR spectra of 10 mg/mL [Bmim][Cl] samples were recorded on a Bruker-AC-200E (200 MHz) instrument, using D<sub>2</sub>O as solvent. Sample 1) *Standard [Bmim][Cl]*: pure IL; sample 2) *Reused [Bmim][Cl]*: IL recovered and reused 5-times following the iterative protocol described in Experimental section; sample 3) *Reused [Bmim][Cl]+charcoal*: IL from sample 2 after cleaning by treatment with charcoal for 48 h at room temperature.

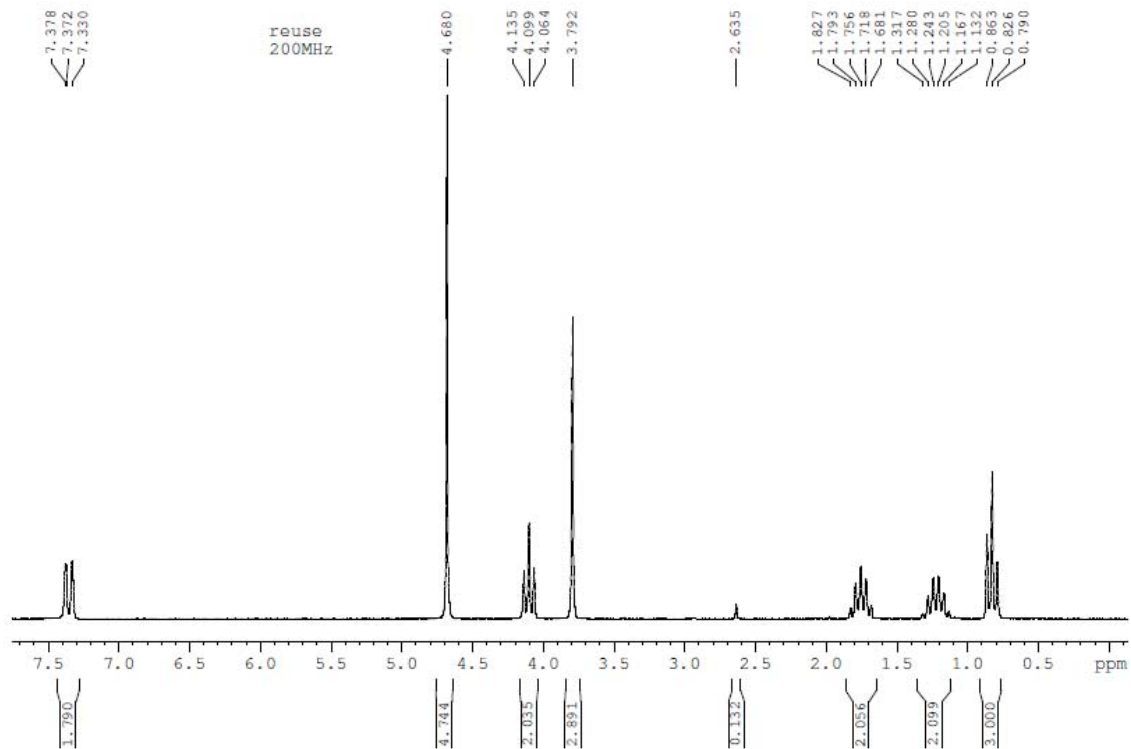
#### Sample 1. Standard [Bmim][Cl]



Sample 2. Reused [Bmim][Cl]



Sample 3. Reused [Bmim][Cl] and cleaned with charcoal



### Comparative spectra

