## **Supplementary Material**

## **Observation of Potential Contaminants in Processed Biomass using Fourier Transform Infrared Spectroscopy**

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(b) Acetone







(d) Methanol



(e) Tetrahydrofuran (THF)



(f) Dioxane







(h) Glycerol







(j) Pyridine



**Figure S1.** FTIR spectra of preprocessing solvent contaminants on poplar. (a) Water; (b) Acetone; (c) Ethanol; (d) Methanol; (e) Tetrahydrofuran (THF); (f) Dioxane; (g) Toluene; (h) Glycerol; (i) Chloroform; (j) Pyridine.





(b) Hydrochloric acid



(c) Phosphoric acid



(d) Acetic acid



(e) Sodium hydroxide



(f) Ammonium hydroxide



**Figure S2.** FTIR spectra of preprocessing acid and alkaline contaminants on poplar. (a) Sulfuric acid; (b) Hydrochloric acid; (c) Phosphoric acid; (d) Acetic acid; (e) Sodium hydroxide; (f) Ammonium hydroxide.

(a) 1-Butyl-3-methylimidazoilium chloride



(b) 1-Benzyl-3-methylimidazoilium chloride



(c) Deep Eutectic Solvent (Choline chloride–Urea)



(d) Deep Eutectic Solvent (Choline chloride–*p*-Hydroxybenzoic acid)





(e) Deep Eutectic Solvent (Choline chloride–4-Hydroxybenzaldehyde)

(f) Deep Eutectic Solvent (Choline chloride-*p*-Coumaric acid)



Figure S3. FTIR spectra of ionic liquid contaminants on poplar. (a) 1-Butyl-3-methylimidazoilium chloride;
(b) 1-Benzyl-3-methylimidazoilium chloride;
(c) Deep Eutectic Solvent (Choline chloride–Urea);
(d) Deep Eutectic Solvent (Choline chloride–p-Hydroxybenzoic acid);
(e) Deep Eutectic Solvent (Choline chloride–4-Hydroxybenzaldehyde);
(f) Deep Eutectic Solvent (Choline chloride–p-Coumaric acid).





(b) β-glucosidase



**Figure S4.** FTIR spectra of enzyme contaminants on poplar. (a) Cellulase; (b)  $\beta$ -glucosidase. Note. Gray: poplar without contaminants; Black: poplar with contaminants

(a) Hydroxymethylfurfural (HMF)



(b) Furfural



**Figure S5.** FTIR spectra of biomass-derived chemical contaminants on poplar. (a) Hydroxymethylfurfural (HMF); (b) Furfural.