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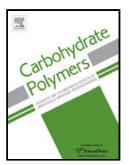
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ACCEPTED MANUSCRIPT

Birch wood pre-hydrolysis vs pulp post-hydrolysis for the production of xylan-based compounds and cellulose for viscose application

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Highlights

- Pulp post-hydrolysis results in higher cellulose yield than wood pre-hydrolysis
- Elevated temperatures during post-hydrolysis promote supramolecular re-arrangements
- Higher accessibility of -OH groups in pre-hydrolyzed pulps
- High purity and molar mass xylan extracted in high yield by water post-hydrolysis

Abstract

Hydrothermal treatments of birch wood and kraft pulp were compared for their ability to extract the xylan and produce viscose-grade pulp. Water post-hydrolysis of kraft pulp produced a high-purity cellulosic pulp with lower viscosity but higher cellulose yield than traditional pre-hydrolysis kraft pulping of wood. Post-hydrolysis of pulp also increased the crystallite dimensions and degree of crystallinity in cellulose, and promoted a higher extent of

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