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Structural and morphological characterization of cellulose pulp

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Abstract

Understanding the structure of cellulose is of utmost importance in order to enhance its accessibility and reactivity to chemical processing. Therefore, the aim of this study was to evaluate the effect of ultrasound pretreatment on the structure of cellulose. Ultrasonic pretreatment involves the use of high intensity ultrasound waves to agitate and break intermolecular bonds that hold cellulose molecules together. Acid sulphite based dissolving wood pulp samples were ultrasonicated for 5, 10 and 20. Structural and morphological characterization using the AFM and SEC-MALLS showed a change on the surface morphology as well as change in the MWD of the sonicated samples.