

Relaxation and hydrophilic properties of asp and spruce celluloses in paper production

© Tatiana V. Smotrina,^{†*} Roman V. Sergeev,² Piotr S. Novikov,²
Svetlana N. Maslennikova,² and Ekaterina E. Bolshakova²

¹ Department of Physics. ² Department of Forest Selection, Non-Wood Resources and Biotechnology.
Volga State Technological University. Lenin St., 3. Yoshkar-Ola, 424000. Mari El Republic. Russia.

Phone: +7 (8362) 68-68-04. E-mail: tatyana-smotrina@yandex.ru

*Supervising author; [†]Corresponding author

Keywords: *organic-solvent cellulose, hemicellulose, grinding, nuclear magnetic relaxation, water sorption.*

Abstract

The comparative analysis of the dependence of mechanical modification on structure, relaxation properties and interaction features of organic-solvent celluloses with water was carried out. The influence of molecules of hemicellulose fraction on the process of proton magnetic relaxation in cellulose and adsorbed water was shown in the wide range of humidity contents. The correlation of the results obtained by NMR, IR-spectroscopy and sorption has been shown.