

INTEGRATION OF LIGNIN WITH RESIDUAL SOY PROTEINS IN THE FABRICATION OF FIBER WEBS FOR UTILIZATION IN THE FIELD

Carlos Salas¹, Mariko Ago² and Orlando J. Rojas^{1,3}

¹North Carolina State University, Departments of Forest Biomaterials, Raleigh, NC 27695, USA.

²Tokushima Bunri University, Faculty of Science and Engineering, Sanuki, Kagawa, Japan.

³Aalto University. Department of Forest Products Technology, Aalto, Espoo, FI-00076. Finland.

Corresponding email: clsalasa@ncsu.edu

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Abstract

Lignin, cellulose and other natural polymers such as proteins have been explored recently in the development of novel materials because of their interesting functionality, availability and renewability. In this work, composite lignin-soy protein nanofibers were produced by electrospinning of aqueous alkaline solutions at different mass ratios. The results indicate that the addition of polyethylene oxide coadjutant facilitated the formation of defect-free fibers whose diameter (120 to 400 nm) increased with lignin concentration. Further analysis by differential scanning calorimetry and Fourier Transform Infrared indicate favorable interactions between lignin and soy protein. The results indicate that mixtures of combination of lignin with other biopolymers represent a suitable alternative for the development of composite fibers.