

Applications for Kraft Lignin Powder



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Objective:

To explore the feasibility of lignin as a chemical feedstock through the production of lignin polymers

Research Project:

Lignin polymer films were considered for application in active food wrapping. Suitable solvents for lignin and polylactic acid (PLA) were explored. Dichloro-methane/dimethyl sulfoxide and tetrahydrofuran/water systems were determined to best solubilize lignin and PLA. Lignin/PLA blends were created. Films without added polymer were also created. Films are glassy and brittle. Further experimentation to increase flexibility is required. To further investigate the properties of lignin polymers, an electrospinning unit was constructed. Electrospun lignin nanofibers will be produced and their properties investigated.



Images:

Lignin-only films (Viewer's Left)

PLA/Lignin films (Viewer's Right)

Electrospinning unit (Viewer's Right Corner)