USDA/NIFA Program: ***Biobased Products and Bioenergy Production Research***

TITLE: Development and Characterization of Novel Soy-Based Adhesives for Bonding Wood

INVESTIGATORS: Li, K. (PI)

INSTITUTION: Oregon State University

NON-TECHNICAL SUMMARY: Urea-formaldehyde (UF) resin is derived from carcinogenic formaldehyde, and is predominately used for making interior wood composite panels. The overall goal of this project is to develop environmentally friendly wood adhesives from renewable soy flour and glycerol to replace the UF resin. We have already developed a commercially viable new wood adhesive: soy flour/polyamideamine-epichlorohydrin (PAE) adhesive. PAE is a petrochemical-based polymer and is expensive. The focus of this project is to develop and characterize novel curing agents from glycerol to replace PAE. The new curing agent is environmentally friendly, and is expected to be much cheaper than the PAE. We will optimize the production of interior plywood. We would also like to transfer the new adhesive technology from laboratory to commercial production.

PROJECT CONTACT:

Name: Li, K.
Phone: 541-737-8421
Fax: 541-737-3385
Email: kaichang.li@oregonstate.edu