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**Modification and characterization of *O*-acetyl galactoglucomannan based derivatives**

There is an interest of the industry to develop novel and renewable materials out of wood that today go to waste or incineration. *O*-acetyl galactoglucomannans (GGM) can be ultrafiltrated from process waters of pulp mills even in industrial scale or GGM can alternatively be isolated from wood by hot-water extraction. Modified GGM can potentially be used in packaging, coatings, degradable films or as emulsion stabilizers, dietary fibers, and nutritional supplements, to name a few examples

The purpose in this project is to introduce novel properties to GGM by substitution reactions on hydroxyl groups and characterize structure and physico-chemical properties of prepared novel compounds. For instance, introduction of hydrophobic moiety to GGM, e.g. by esterification with anhydrides, enhances the oxygen and grease barrier properties in film and coating applications. Cross-linking of GGM attributes to subsequent hydrogel formations and film applications. Introducing cationic properties to GGM enables it to function as flocculent of projective colloid in water dispersions.