Abstract Submission to Be Considered As An Oral Presentation at AICHE 2014 Annual Meeting in Biomass Characterization, Pretreatment, and Fractionation Session

Quantifying Variations in the Biomass Recalcitrance of Douglas Fir

Scott Geleynse[1], Keith Jayawickrama[2], Xiao Zhang[1]
[1] Washington State University, [2] Oregon State University

To assist in the development of an economically effective industry for the production of biofuels and other products from douglas fir forestry wastes, this study discussed in this presentation aims to identify and characterize variations in the recalcitrance between individual Douglas fir trees. Characterizing these variations is intended to provide a foundation for further research into the nature of biomass recalcitrance and to determine the feasibility of potential tree improvement programs aimed at reducing recalcitrance of D. fir. In this presentation, we will discuss a method devised to screen highly recalcitrant woody biomass samples for properties related to biomass recalcitrance. The testing and application of this method using core samples taken from D. fir trees plantation grown in Oregon will also be discussed. We will present a "recalcitrance factor" that was designed to generate a single quantity to indicate the overall recalcitrance of a single tree, comparable to other trees in the same population. This factor is utilized to provide information for tree improvement programs and the screening of trees for further studies investigating biomass recalcitrance.

Presenting author:
Scott Geleynse
Bioproducts Sciences and Engineering Laboratory
School of Chemical Engineering and Bioengineering, Washington State University
2710 Crimson Way, Richland, WA 99354

Contact: scott.geleynse@email.wsu.edu, x.zhang@wsu.edu