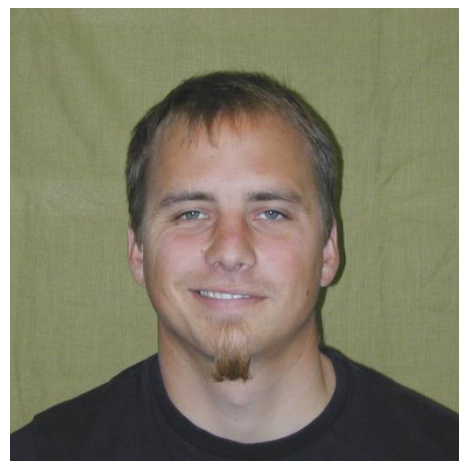


## Jens Krogell

PhD student

Laboratory of Wood and Paper Chemistry

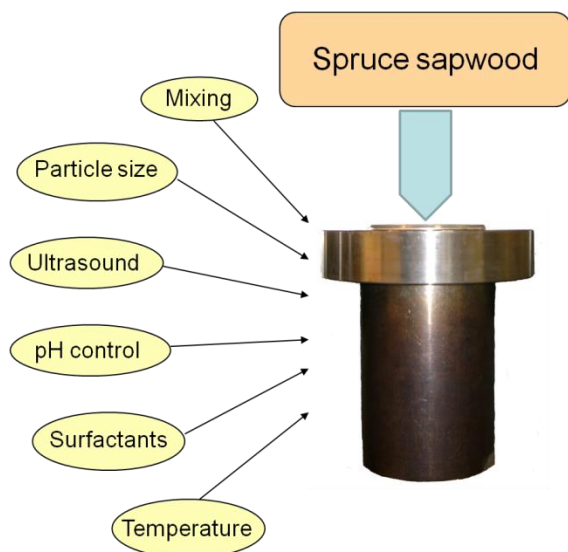
Åbo Akademi University



### “Intensified and controlled hot water extraction of biopolymers from wood”

**Background:** Wood based hemicelluloses are good raw materials for different chemicals, materials and applications and could add value to the forest industry. Certain hemicelluloses could be used as dietary supplements, base chemicals or as fillers in the papermaking process. Extraction is the best, or only, way to get these desired compounds from the wood and extraction with water has been shown to work well. Water is besides a cheap solvent also very environmental friendly.

**Aim:** I strive in my research to gain deeper understanding and knowledge of the extraction process and to understand what happens with the wood and its components as the extraction proceeds. With this knowledge it is possible to tailor an optimal extraction process depending on the raw material and desired end product. I believe that if one combines this with reaction engineering one get a new kind of extraction thinking with many new opportunities to improve the extraction process. I am planning on using several different extraction parameters such as ultrasound, pH measurement and -control and surfactants for intensifying and/or controlling the extraction. I will also study the optimal particle size and mixing speed for the extraction to get the best yield of hemicelluloses from the wood, both amount and molecular weight of the hemicelluloses.



Furthermore, when the fundamental phenomena are clarified, I will aim at developing new reactor systems that would be custom-made for certain types of extractions.