

Master's Thesis

We are looking for a student interested in papermaking research for the following Master's project:

Reducing negative effect of pitch on paper strength

Background: In the kraft pulping process wood chips are converted into pulp fibers by cooking under alkaline conditions. In the course of this process some wood compounds are dissolved into the cooking liquor. After cooking the fibers are washed to remove the dissolved wood material and cooking chemicals. Unfortunately, this washing is never perfect and a part of the dissolved wood material ends up in the paper mill with the fibers. From the dissolved wood compounds pitch, which is the resin produced by trees for protection after injury, has been found to be especially harmful for paper strength. Thus, it is important to understand which pitch compounds are actually harmful, how these harmful compounds disturb papermaking and how to reduce the harmful effect of these compounds.

Project description: The aim of this master's project is to study how pitch behaves and influences on paper strength under different papermaking process conditions (varying pH, electrolyte valence/concentration...). Secondly, the aim is to investigate potential methods to reduce the harmful effect of pitch. These methods include pulp washing and various papermaking additives (e.g. talc).



Contact

Institute of Paper, Pulp and Fibre Technology
Jussi Lahti | 0316 873 30759 | jussi.lahti@tugraz.at