



**Master Thesis:**

## **Investigation of hemicellulose foam/cellular composite material and characterization of absorbing and mechanical properties**

### **Purpose**

Investigate the possibilities to make a soft, open cell, hydrophilic foam/cellular composite material made of hemicellulose. The foam/cellular material should be made by using three different foaming techniques (freeze drying, whipping and extrusion). The absorbing and mechanical properties of the foam should be characterized. The work will include:

- Literature search
- Making foam composite
- Characterisation of foam composite

### **Background**

Materials that can absorb different kind of fluids are important in hygiene products. The absorbent materials are usually made of fibrous structures and super absorbent polymers. Foam structures can also be used for absorption of liquid. Today most foams are made from fossil-based raw materials. From a sustainability point of view it would be an advantage to produce foam from renewable sources.

SmartFoam is a project that facilitates the shift from fossil-based raw material to renewable hemicellulose. The hemicellulose will be extracted from by-products, characterized and formulated to foams.

SCA is a leading global hygiene and forest products company. SCA develops and produces sustainable tissue, forest and personal care products such as baby diapers, incontinence care products and feminine care products. SCA is a member of the SmartFoam project.

### **Organization and timing**

The Master Thesis will be made in collaboration between SCA Hygiene Products and Chalmers University of Technology. The work is included in the SmartFoam project and will be performed at Chalmers (mainly at the Department of Chemistry and Chemical Engineering and Department of Materials and Manufacturing Technology). The duration of the Master Thesis is 20 or 40 weeks with start in August 2016.

### **Contact persons**

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