ReCell

Refined cellulose derivatives for high-value biomedical products

Project Start Month: 01 2008

Project Duration: 36 months

Project Consortium

Project Coordinator

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Project Objectives

- To advance the basic knowledge on structure-property relationships from pulp production to cellulose derivative applications in order to enable for development of improved and new products for high-value applications.

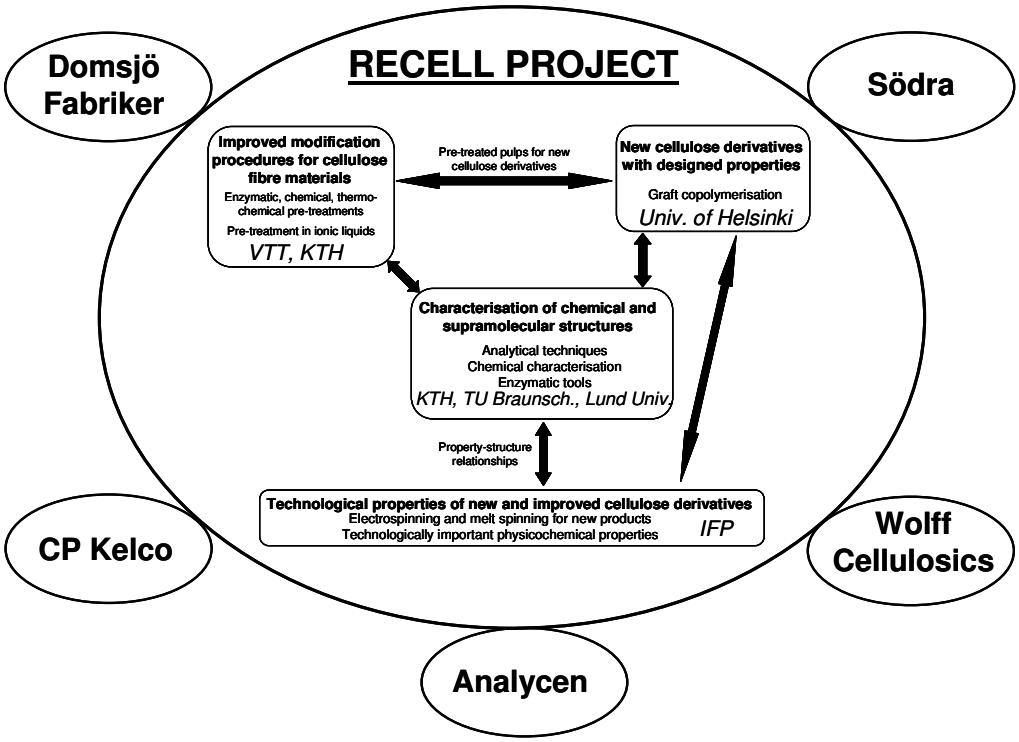
- To transfer this knowledge to improve processes for production of industrially important cellulose derivatives.

- To use new controlled free radical polymerisation reactions on various cellulosic materials to develop new cellulose derivatives.

- To develop a comprehensive methodology for chemical structure elucidation of cellulose derivatives enabling correlation of technological properties to chemical structure.

- To apply the improved and new cellulose derivatives into high-value biomedical products.

Project Approach



Expected Project Impact

Improved understanding of structure-property relationships of industrially important cellulose derivatives and creating new functionality of cellulose derivatives enables a more efficient use of biopolymers from wood material. Production, modification and application of cellulose, especially cellulose derivatives, are of high importance in the participating countries.

Adding functionality to the cellulose fibers will add sales value to existing products e.g. pulp fibres with a covalently attached strength agent. The pulp producers will gain improved knowledge on pre-treatment of cellulose, which can enable for expansion into new markets.

Cellulose derivative manufacturers will have the opportunity to implement new analytical methodology for chemical structure analysis of their products. In addition, cellulose derivative manufacturers will gain increased knowledge on special modified cellulose raw materials and their effect on the properties of the final cellulose derivatives.

Enhanced predictability of the quality of cellulose derivatives from the commonly determined physicochemical properties will benefit producers and end-users.

The research results will be published in international journals with referee practice. In addition, project members will give presentations at national and international conferences.

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