

NEOCEL

Novel processes for sustainable cellulose-based materials

Summary

As the world's population increases, it needs more textiles. A source with great potential for long term increase in production volumes are man-made cellulosic fibres.

The NeoCel project will develop innovative and techno-economically feasible processes for producing high quality textile fibres from reactive high cellulose pulps. It will enhance the use of cellulose from sustainable sources, with a special focus on textiles.

NeoCel will reduce the environmental impact and occupational health issues relating to man-made cellulose fibre production and promote sustainably produced, good quality man-made cellulosic fibres for the textile and fashion industries.

Objectives

- To develop innovative and techno-economically feasible alkaline processes for sustainable production of high quality textile fibres from reactive highcellulose pulps in connection to pulp mills.
- Enhance the use of cellulose from sustainable sources for material applications with special focus on textiles
- Reduce the environmental impact and occupational health issues related to man-made cellulose fibre production
- Promote the availability of sustainably produced, good quality man-made cellulosic fibres for textile and fashion industry

Expected impacts

- Developing regenerated cellulose textile fibres with lower environmental impact than any other type of existing textile fibre. The developed fibres to be highly cost competitive due to at least 15% lower production cost compared to standard viscose.
- To strengthen the market position of regenerated cellulose fibres for textile application by an expected reduction of production cost of at least 15% for the developed process in the project. The market share is expected to increase to 15% even if the total market for textile fibres is also expected to strongly increase.
- Achievement of strength properties in the range of cotton and outperforming standard Asian viscose: novel regeneration chemistries in the first spin bath enabling both improved recovery of dope chemicals and facilitating prolonged stretching leading to higher strength and addition of strength increasing compounds.
- Competitive production of regenerated cellulose fibres by system integration with the pulp mill, energy optimisation, recovery/regeneration of chemicals and



<http://www.neocel.eu>

Type of Action:

Research & Innovation Action

Value Chain: VC2 – forest-based

Start date: 01 September 2016

End date: 31 August 2019

BBI JU contribution: € 1,934,233.00

better use of pulp mill side streams.

Project coordination

- SP Technical Research Institute of Sweden (Sweden)
- Innventia AB (Sweden)
- Teknologian tutkimuskeskus VTT Oy (Finland)
- Katty Fashion (Romania)
- FOV Fabrics (Sweden)

Email: contact@tue.nl

- Maurer (Switzerland)
- Andritz (Finland)
- Re:newcell AB (Sweden)
- AkzoNobel Pulp and Performance Chemicals (Sweden)
- Domsjö Fabriker AB (Sweden)
- AB Enzymes GmbH (Germany)
- Roal Oy (Finland)

Organisation name: SP Technical Research Institute of Sweden (Sweden)