BILLERUDKORSNÄS

Press release

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Mobile Factory that **Produces Nanocellulose**

Innventia and BillerudKorsnäs have entered a collaboration with the purpose of building a mobile demonstration plant for nanocellulose and to test the material in full-scale papermaking. The project is financed by Vinnova, Innventia and BillerudKorsnäs.

Nanocellulose can be used as additives in papermaking to make lighter and stronger paper and board. It can also be used in a variety of other applications in the food, pharmaceutical, and construction industry.

This means that paper is given completely new properties and could replace plastics, for example, in many areas. More products could thus be produced from renewable and biodegradable raw material.

Innventia runs since 2010 a pilot plant for the production of nanocellulose at the research institute in Stockholm. By this establishment, sufficiently large amounts of nanocellulose could be manufactured for research and development addressing paper applications. In a unique collaboration between BillerudKorsnäs and Innventia, a mobile demonstration plant is now being built which makes it possible to produce nanocellulose on a large scale for use in full-scale trials on paper and board machines.

“Nanocellulose has a fantastic potential in paper applications as well is a number of other applications. This new project is exciting as it gives us the possibility to validate the potential in full scale,” says Mikael Ankerfors, Project manager, New Business Lab, BillerudKorsnäs.

“Innovation is at the core of our business model. To be part of this project and explore the potential of full scale production of nanocellulose is a perfect match with our mission to challenge conventional packaging for a sustainable future,” says Magnus Wikström, SVP Strategic Development, BillerudKorsnäs.

“This is a very important step. The availability of test beds and demonstration plants are often crucial for up-scaling new processes resulting from our research and development,” says Anna Wiberg, Director of Business Development Materials Processes, Innventia.

“Thanks to the collaboration with BillerudKorsnäs, the development towards new nanocellulose-based materials can take a leap. Later, we will offer more companies access to the demonstration plant as a support in their innovation processes,” says Torgny Persson, Vice President Material Processes, Innventia.

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Facts: Nanocellulose

Nanocellulose (also called microfibrillated cellulose, MFC or nanofibrillated cellulose, NFC) is produced by delaminating cellulosic fibres in high-pressure homogenisers. Fully delaminated nanocellulose consists of long (1-2 micrometres) microfibrils (5-20 nm in diameter) and has the appearance of a highly viscous, shear-thinning transparent gel. The material has exceptional strength characteristics on a par with Kevlar, a lightweight material used to manufacture high-strength, durable materials. However, in contrast to Kevlar and other materials based on fossil fuels, nanocellulose is completely renewable. There are a wide variety of potential applications for nanocellulose, including, for instance, the manufacture of both paper and board. With regard to paper/board, nanocellulose could be used as a strengthening agent in paper with a high filler content. Other areas of application may be surface sizing and coating, e.g. as a barrier material (against oxygen, water vapour, grease/oil) in food packaging. Then there are applications in the field of nanocomposites, non-caloric food thickeners, emulsion/dispersion, oil recovery applications, cosmetic/pharmaceutical applications, and applications in the electronics sector.

Facts: Innventia

Innventia is a research institute that uses a scientific basis to help companies produce valuable products from forest-based or other bio-based raw materials, in an efficient and sustainable manner. One traditional product is paper, but we also develop other processes and products from renewable raw materials. Our expertise is always at the cutting edge, thanks to our own research activities and our collaboration with other institutes, universities and businesses. As an innovation partner, we can strengthen all or parts of our customers' processes, from the initial idea all the way through to a commercial product. We call this approach boosting business with science.