

# RAIZ



Forest and Paper Research Institute

TECHNOLOGICAL  
SCOUTING NEWSLETTER

April 2019

## Highlights

- New cellulose-based products dominates this April TS Newsletter, with new paper bottles, paper straws agricultural paper and 3D printing solutions
- Klabin's new expansion cycle focused on kraftliner paper

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### Services Provided by RAIZ Technological Scouting:

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- Industrial Property (IP) Survey (quarterly)

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## BIOREFINERY



photo: ALPA

### BillerudKorsnas: Speeding up innovation

At its Sustainability Annual Report 2018, BillerudKorsnäs says to be aiming to speed up innovation, targeting 15% of sales from new products by 2023. Focus is on cellulose-based packaging, as an alternative to oil, plastic and aluminium.

Paperboard properties will be developed with the help of microfibrillated cellulose, capable of attaining the same strength properties as ordinary paperboard using less material.

A commercial paper battery will be further developed, in a partnership with Uppsala University, for smart packaging which needs small, sustainable power sources, enabling to be tracked throughout the transport chain using sensors. It can also be applied to food packaging, providing information of temperature or air humidity.

BillerudKorsnäs also expects to continue the development of a paper bottle prototype already created with the Carlsberg Group, the Green Fiber Bottle. A Joint Venture with ALPLA, a plastic packaging manufacturer, in the Danish paper bottle company ecoXpac was already announced. BillerudKorsnäs adds that future generations of the paper bottle will be both fully bio-based and have biodegradable barriers.

Read more ➤ [BillerudKorsnäs | Annual and Sustainability Report 2018](#)

## BIOREFINERY



photo: UPM

### UPM: 3D printing

#### UPM and Carbodeon: Cellulose and nanodiamond materials for 3D printing

Carbodeon and UPM are developing cellulose and nanodiamond reinforced raw materials for 3D printing. The nanodiamond additives from Carbodeon will provide improved stiffness and strength and higher heat deflection temperature. Fine cellulose fibers will contribute by improving self-supporting melt flow, enabling objects with round or other complex shapes to be printed without warpage problems. The two companies additionally say that the combination of their technologies opens new possibilities for tailoring the properties for 3D filaments and large scale granular based additive manufacturing.

Read more > [UPM](#)

### UPM, ABB and Prenta: Large scale robot-based 3D printing

Together with ABB and Prenta, UPM has made possible to use an extrusion head of Prenta's IRB6700 6-axis 3D printing robot to create a 3D printing system that is ideal for very precise and large scale additive manufacturing. The used biocomposite is UPM's Formi 3D. The three companies additionally say that the developed robot based granulate printing system enables time and cost efficient fabrication of large-scale 3D parts with a short lead-time. Potential business areas include furniture design, molding or boat industry.

Read more > [UPM](#)



photo: Stora Enso

### Stora Enso and AR Packaging: new gas-tight tray

Modified atmosphere packaging has been developed for applications in pressed paperboard trays. Using a new tray pressing technology and Stora Enso's barrier coated board Trayforma, the new gas-tight trays provide a cost-efficient and sustainable alternative to plastic trays, combining a high proportion of renewable materials with an attractive look and feel of paper. AR Packaging is already running trials of the new trays with several major chilled food producers in Europe. Insights on the applied technology can be taken from the recently published patent by Stora Enso US20190054714A1.

Read more > [Stora Enso](#)

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photo: Ahlstrom-Munksjö

### Ahlstrom-Munksjö: fiber-based single-use paper straws

Ahlstrom-Munksjö has developed the CelluStraw™, a new fiber-based solution made of renewable materials, with applications in the food industry, standing as an alternative to single-use plastic straws.

The CelluStraw™ consists of specialty paper grades developed for the inner and outer plies of paper straws. Is renewable, biodegradable and safe for food contact. It is recommended for cold drinks.

Read more > [Ahlstrom-Munksjö](#)

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## BIOREFINERY



photo: Smurfit Kappa

### Smurfit Kappa: New AgroPaper for the agricultural sector

Researchers from Smurfit Kappa’s Nervion and Sangüesa paper mills joined with the INTIA (a research centre for agrifood technology in Spain) for developing a way for using long pine fibers as a basis for a renewable and compostable paper, designed for replacing plastic material used by farmers and growers for ‘mulching’ when growing vegetables. The developed AgroPaper™ safely and harmlessly biodegrades as a compost into the ground, and in site carried out tests revealed that, in many cases, the crop yield actually increased when using Smurfit Kappa’s AgroPaper™.

Read more > [Smurfit Kappa](#)

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## FOREST



photo: La voz de Galicia

### Ence: new biofactory for Asfonor

The North Forest Association (Asfonor), based in Pontevedra, is executing a project to produce the *Anaphes nitens* wasp, a species that parasitizes the eggs of the eucalyptus weevil ( *Gonipterus platensis* ) and slows its expansion. The project received a grant of 25,000 euros from Ence’s Social Plan. The main objective is the startup of a biofabric or egg production center, gorgjo eggs parasitized with the mosquito, for promoting a biological control of the beetle.

The first phase of this initiative consisted in the development of the facilities intended for this Anaphes center, last February. Now the first production tests are planned to begin. The challenge is to treat between 2,500 and 4,000 hectares of eucalyptus in the province. The current facilities are designed so that they can reach twelve thousand hectares a year when it is fully operational.

Read more > [La Voz de Galicia](#)

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## P&P COMPANIES PROJECTS



### Klabin's: Puma II project, a new expansion cycle

Klabin announced a new expansion cycle, named Puma II project, focused on kraftliner paper and with a gross investment budget of BRL 9.1 billion. The project consists on the construction of two new integrated paper machines with a combined capacity of 920,000 tonnes/yr of kraftliner. The Puma II will be divided into two stages. The first stage consists of the construction of a principal fiberline for the production of unbleached pulp, integrated with a Kraftliner and White Kraftliner paper machine, the products of which will be sold under the brand Eukaliner, with an annual production capacity of 450 thousand tons. The second stage incorporates the construction of a complimentary fiberline for the production of unbleached pulp integrated with a Kraftliner paper machine with an annual production capacity of 470 thousand tons and the expansion of some support installations. The startup of the first machine is expected in the second quarter of 2021, and the startup of the second machine is expected in the second quarter of 2023.

Read more > [PaperAge](#)

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photo: Ence

### Ence: Project to eliminate sewage sludge odors with biomass boilers ashes

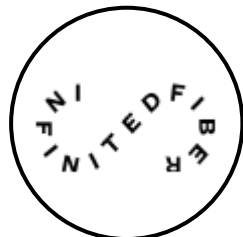
In collaboration with the water supply and sanitation company of Seville, Ence has proved with laboratory tests that ashes from its Huelva mill kilns have effectiveness in eliminating odors from the city wastewater treatment sludge, additionally improving their properties for agricultural use.

Field tests have begun for corroborating these results.

Read more > [Ence](#)

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## START-UP NEWS



### Infinited Fiber Company: H&M, Fortum and Virala investment

Founded in 2016 and with headquarters in Espoo, Finland, [Infinited Fiber Company \(IFC\)](#) has developed a technology which involves the extraction of cellulose from various cellulose-rich raw materials, such as paper waste, and its conversion into a solution from which new fibers can be made. After use, the fibers can be recycled via the same process time after time, without affecting its quality. The technology is said to have major cost and ecological advantages and is able to be fitted into any existing pulp and viscose fiber plant.

IFC has now raised 3.7 million euros in funding from investors, including Swedish fashion major [H&M Group](#), Finnish energy major [Fortum Oyj](#) and equity company [Virala Oy](#). H&M investment in IFC is a further contribution by the fashion company to the change from a linear to a circular fashion industry.

IFC is currently running a 50-tonne-per-annum pilot plant in Espoo and plans to increase the annual capacity up to 500 tonnes in order to meet the growing demand from the market.

Read more > [Infinited Fiber Company](#)

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### Nanollose: First bacterial cellulose for nonwovens

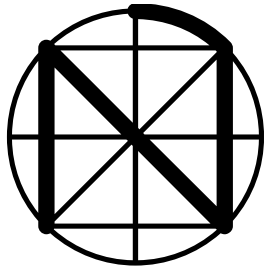
This Australian company has developed a proprietary technology for producing bacterial cellulose from biomass waste products from beer, wine and other liquid food industries. This bacterial cellulose is then converted to a viscose-rayon fiber, with applications in textile and clothing. The viscose fiber was branded as Nullarbor.

Although not much information is still available, it was shortly released the information that Nanollose has successful completed a pilot scale production of its cellulosic fibre derived from coconut waste, opening up the Nullarbor branded fibre to nonwovens applications. Further developments will be monitored.

Read more > [nonwovensnews](#)

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