

RAIZ



Forest and Paper Research Institute

TECHNOLOGICAL
SCOUTING NEWSLETTER

June 2019

Highlights

- New paper developments for straws and tissue products packaging
- Innovative cellulose-based products involving food sensors, construction materials and woundcare patches
- Top 10 highlights on cellulosic nanomaterials from TAPPI Nano 2019

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Services Provided by RAIZ Technological Scouting:

- Technological Scouting Newsletter (monthly)
- Technological Scouting On Demand (specific technological issues, upon request)
- Industrial Property (IP) Survey (quarterly)

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FOREST

photo: SCA

SCA publishes map of nature conservation areas

SCA has set aside 8% of its productive forest land, in total more than 166,000 hectares, from forest management and a further 59,000 hectares are managed with adapted methods with particular focus on creating the best possible conditions for the forest's flora and fauna.

These areas were inventoried to identify parts with high conservation values and to ensure that areas important for forest biodiversity are protected. Additional forest areas are managed to improve conditions for sensitive animal and plant species. This may involve controlled burning of forest areas or encouraging broad-leaved forest to dominate.

SCA has now made available to the public a map where the forest areas voluntarily set aside are visible. The forest age, the main tree species and the most common type of ground vegetation are also depicted.

Read more > [SCA | Map](#)

BIOREFINERY



Suzano: paper for straw production

Suzano presents the Loop®, a paper developed for the production of paper straws. The paper is recyclable, biodegradable, and produced from eucalyptus pulp.

Suzano presents two versions of the straw paper, one of them has a durability of up to 2 hours in use, ideal for consumption of beverages such as water, juices and teas, and the other option has a sustainable barrier that offers greater resistance for use in alcoholic beverages, milk shakes and soft drinks.

Read more > [TissueOnline](#)

● Technological
● Product Development



photo: Sofidel

Eco-friendly tissue products packaging

Two initiatives were announced regarding the environmentally friendly packaging of tissue products:

- A new Sofidel line, the Rotoloni Regina Ecowith, will be arriving in supermarkets from July, with packs made of kraft paper instead of standard polyethylene film;
- Fabio Perini presents the new Paper Packaging Solution, for tissue products, a paper coupled with Mater-Bi, a bioplastic from Novamonte, recyclable, biodegradable, and compostable.

Read more > [Sofidel](#) | [Papnews](#)

● Technological
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BIOREFINERY



photo:
BioMarketInsights

Paper-based biodegradable sensors for meat and fish packaging

Researchers from the Imperial College, London, have developed smartphone-linked, biodegradable spoilage sensors for meat and fish packaging. They are known as ‘paper-based electrical gas sensors’ (PEGS), detecting spoilage gases like ammonia and trimethylamine in meat and fish products. The sensor data can be read by smartphones, so that people can hold their phone up to the packaging to see whether the food is safe to eat.

Read more > [BioMarketInsights](#)

● Technological
● Product Development



FPIInnovations and Resolute Forest Products new biorefinery

FPIInnovations and Resolute Forest Products have announced the commissioning of a new biorefinery plant in Ontario. The plant will use the TMP-Bio, a patented technology for the commercial production of large quantities of bio-sourced chemicals, such as high-quality cellulosic sugars and H-lignin. The plant is expected to have the capacity to treat 100 metric tons of biomass annually, producing lignin and sugars with applications in the development of innovative bio-products, such as wood adhesives, animal feed and composites.

Read more > [PaperAge](#)

● Technological
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CELLULOSE-BASED PRODUCTS DEVELOPMENT

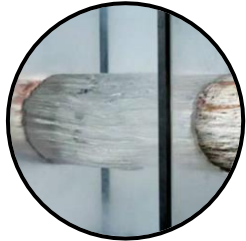


photo: KTH

“Glass” made of wood

Researchers from KTH's Wallenberg Wood Science Center, Sweden, have developed a new thermal energy-storing transparent wood. The see-through wood technology aims to be an alternative for functional load-bearing materials that can cut energy consumption by storing and releasing large amounts of thermal energy. The wood composite is derived from silver birch trees, which is stripped of its lignin, leaving empty porous spaces which are then filled with a polymer that matches the wood refractive index so that light propagates through the material. The self-regulating thermal properties come from the addition of a phase change material (PCM), such as polyethylene glycol (PEG).

Read more > [KTH](#) | [ACS](#)

● Technological
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photo: UPM

UPM's nanocellulose for wound care

UPM has launched a new advanced wound care product for the European market, the FibDex®, which is the first wound dressing created from wood-based nanofibrillar cellulose. In clinical trials, FibDex was shown to provide a favorable environment for healing to occur, being additionally less painful for patients as it is a single application dressing and it peels away from the treatment site once healing has occurred. It has recently received a regulatory approval and a CE mark.

Read more > [Lesprom](#)

● Product Development

CELLULOSE-BASED PRODUCTS DEVELOPMENT



Essity invests in sustainable alternative fiber technology

Essity is investing approximately SEK 400m in an integrated facility for the production of pulp based on alternative fibers from plant-based agricultural by-products, such as wheat straw.

For that, Essity has signed a license agreement securing exclusive rights to a new proprietary technology to produce pulp from agricultural by-products, that will have the same quality as conventional wood-based pulp at a competitive cost.

Read more > [PaperAdvance](#)

● Technological
● Product Development



Photo: PaperAge

Metsä Board: new Paperboard and Packaging Excellence Centre

Metsä announced the establishment of a new Paperboard and Packaging Excellence Centre in Finland. The new centre intends to achieve a broad collaboration between customers and partners throughout the value chain. New paperboard and packaging solutions are expected to be developed. The centre, to be operational in 2020, will include a laboratory, R&D facilities and a packaging design studio with modern technology, as well as the customer feedback centre.

Read more > [Metsä](#)

● Technological
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CELLULOSE-BASED PRODUCTS DEVELOPMENT



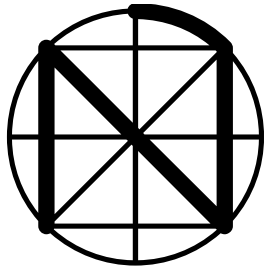
Top 10 highlights on cellulosic nanomaterials from TAPPI Nano 2019

A FPIInnovations delegation have appointed the top 10 highlights from the 2019 TAPPI Nano conference (International Conference on Nanotechnology for Renewable Materials) held in Chiba, Japan :

1. Several large companies are moving ahead with their own proprietary methods of cellulosic nanomaterial (CNM) production;
2. Replacing plastic packaging with CNM film or lamination applications is high on several companies' agenda;
3. CNM R&D is also focused on concrete chemical admixtures, composites, cosmetics, and the crystallization of drugs to control its release, as well as on varied uses for 3D printed materials with different matrixes, such as hydrogels and biopolymers, that could be stretchable and conductive;
4. Canada is considered to be a leading technology developer and at the forefront of producing large-scale amounts of cellulose nanocrystals (CNCs) and cellulosic fibrils (CFs);
5. American engineers and researchers have already built a pilot bridge in California using a concrete and CNC formulation;
6. China and Japan are ramping up CNM production with multiple pilot plants and new commercial plants now in operation;
7. Other countries that may be limited in their ability to develop and market their own CNM industry from the ground up are getting in the game by investing in technology-based companies that produce CNMs and or buying existing companies;
8. Japan has developed CNMs as additives in food products, such as a thickening agent in pancake mixes and red bean pastes;
9. The issue of the safety of human health was a topic of conversation for CNM applications in the food, medical, and cosmetics industries. Research on the subject will become a larger part of R&D;
10. Delegates were offered a Japanese confectionary during a break that contains carboxymethylated cellulosic nanofibrils (CNFs) among its ingredients. The CNFs were said to meet Japanese food regulations and were added to give a moist texture to the product.

Read more > [PaperAdvance](#)

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