

# RAIZ



Forest and Paper Research Institute

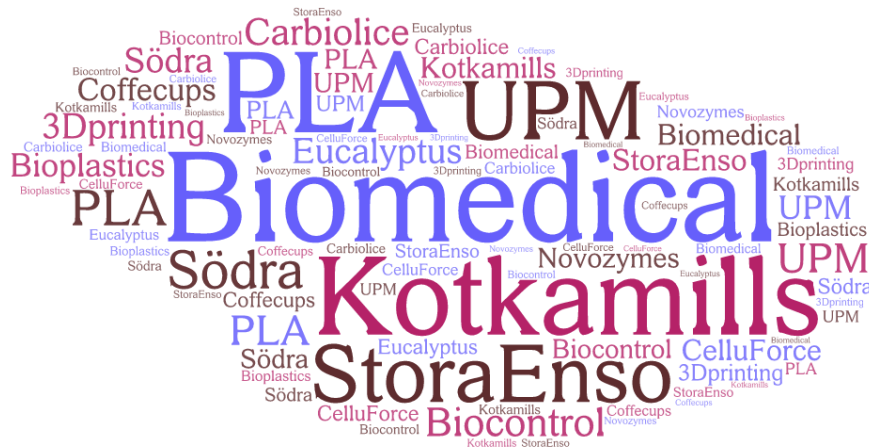
TECHNOLOGICAL  
SCOUTING NEWSLETTER

February 2019

## Highlights

- Wood-based biomedical area: new projects and novel products.
- P&P companies developed food paper based packaging products incorporating biobased components.
- New Zealand continues to develop solutions for fighting Eucalyptus pests.

## Contents



- UPM looking for wood-based biomedical solutions
- 3D printed ear using cellulose
- Södra allocates 50 million SEK to forest management research
- New biocontrol agent for Eucalyptus pest approved by New Zealand’s Environmental Protection Authority
- Plastic free coffee cups by Kotkamills
- UPM bioplastics in milk cartons
- Stora Enso new Intelligent Packaging unit
- After 90 years, an improved way to measure paper composition
- CelluForce new modernized facility for producing cellulose nanocrystals
- Carbiolice and Carbios close agreement with Novozymes for self-biodegradable PLA plastics

**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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## WOOD BASED BIOMEDICAL PRODUCTS/PROJECTS



Photo: UPM

### UPM looking for wood-based biomedical solutions

UPM is extending its activity on the biomedical area with the project Wood-to-Biomedical. Through this project UPM, leading research organizations and small to medium sized companies will collaborate to create a new ecosystem of novel wood-based biocompatible materials for several new biomedical applications and technologies. Clinical applications and diagnostics are some of the applications areas mentioned by UPM. UPM already has the GrowDex®, a wood-based cellulose nanofibril hydrogel developed for 3D cell culture.

Read more > [UPM](#)

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● Product Development

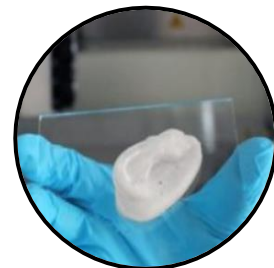


Photo: Paper Advance

### 3D printed ear using cellulose

Scientists at Empa, the Swiss Federal Laboratories for Materials Science and Technology, have developed a 3D printed ear made of a biopolymer and cellulose nanocrystals. The researchers say that the use of cellulose allows incorporating both therapeutic and human cells into the base structure in order to create biomedical implants. The treatment of cartilage diseases and inherited auricular malformation in children are some of the mentioned medical areas of application.

Read more > [PaperAdvance](#)

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## Södra allocates 50 million SEK to forest management research

Södra has decided to allocate more than 4 million EUR for the development of forest management methods and technologies. The goal is to create opportunities for increasing forest production using low-impact methods in family forestry, such as solutions in digitization and tree breeding. The programme, to take place during the period 2019-2022, is intended to create conditions for achieving a 20 % higher annual rate of forest growth on Södra members' estates by 2050. The conservation of biodiversity while maintaining both the natural functions and productive capacity of forest land will be taken into account.

Read more > [PulpPaperNews](#)

● Forest



photo: Scion, *Paropsis charybdis* or eucalyptus tortoise leaf beetle

## New biocontrol agent for Eucalyptus pest approved by New Zealand's Environmental Protection Authority

The eucalyptus tortoise beetle (*Paropsis charybdis*) has been munching on New Zealand's eucalypts for more than a century. A natural enemy of the beetle is the Tasmanian *Eadya daenerys*, a small parasitoid wasp that lays eggs in the larvae of *P. Charybdis*, which then hatch and develop inside them. Scion researchers found out that introducing the *P. Charybdis* into New Zealand would not harm any indigenous beetles or any exotic beetles that are themselves acting as biocontrol agents against weeds. After these results, the New Zealand's Environmental Protection Authority approved the release of the biocontrol agent this February.

Read more > [Scion](#)

● Forest

## BIOREFINERY



photo: PapNews

### Plastic free coffee cups by Kotkamills

Kotkamills presents its new ISLA® Duo cupstock with an innovative water-based dispersion coating to create an effective barrier layer for demanding food and beverage packaging. Not much information is available on the coating, only that PE and PLA are not used in it.

Disposable cups made from Kotkamills' ISLA® Duo cupstock with the developed dispersion coating are plastic free and fully recyclable.

Read more > [PapNews](#)

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photo: BioBasedWorldNews

### UPM bioplastics in milk cartons

Arla Foods, a Danish producer of dairy products, is using renewable wood-based bioplastics in gable top paperboard cartons for milk, yoghurt and cooking products. The new packaging can be recycled with cardboard.

The tall oil-based raw material for the bioplastic is produced by UPM's Lappeenranta biorefinery, as a residue of pulp production.

Read more > [BioBasedWorldNews](#)

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## NEW PAPER PRODUCTS / TECHNOLOGIES



photo: WoodBizForum

### Stora Enso new Intelligent Packaging unit

Stora Enso established a new development unit with focus on intelligent packaging, targeting multiple applications and market sectors. Stora Enso has already been working and marketing intelligent packaging solutions based on RFID (Radio Frequency Identification), a wireless technology for the transfer of data electronically. With the new unit, Stora Enso expects to develop intelligent packaging applications for different markets areas using RFID solutions, such as fashion and apparel companies, which use RFID on labels, for airlines, using RFID on luggages, and for hotels, offices and other public places that need intelligent cabinets that can store goods and collect payments through electronic means.

Read more > [WoodBizForum](#)

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photo: PhysOrg

### After 90 years, an improved way to measure paper composition

Researchers at the National Institute of Standards and Technology (NIST), in collaboration with the U.S. Government Publishing Office (GPO), have developed a novel and nondestructive method to rapidly measure the wood and non-wood fiber components in paper. The method, known as dielectric spectroscopy, identifies the composition analyzing the specific frequency at which the water molecules rotate. For instance, a lignin content will significantly slow the rate at which the water molecules can flip their orientation when an alternating electric field is applied, and recording the water molecules response rate can therefore provide a highly sensitive measure of the fibers type and their concentration in a paper sample.

Read more > [Phys.Org](#) | [Scientific Paper](#)

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## BIOREFINERY



photo: PaperAge

### CelluForce new modernized facility for producing cellulose nanocrystals

CelluForce, the Canadian producer of cellulose nanocrystals, has restarted operations at its cellulose nanocrystals plant after a major upgrade project. With a production capacity of 300 tonnes per year, CelluForce says that its new modernized plant will help meet the growing demand for cellulose nanocrystals and will be a blueprint for the design of future CelluForce plants. The new plant design will allow CelluForce to use improved new cutting-edge equipment to increase process efficiency by over 50%, stabilize production capacity at 300 tonnes per year, produce various grades of product required by customers, and continue to develop new cellulose nanocrystals based applications by CelluForce research teams and partners.

Read more > [PaperAge](#)

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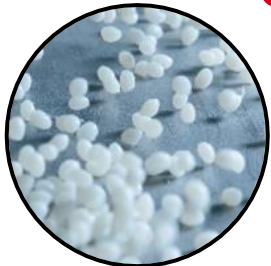


photo: Carbiolice

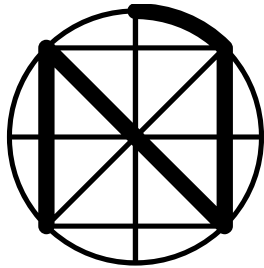
### Carbiolice and Carbios close agreement with Novozymes for self-biodegradable PLA plastics

French Carbiolice and its main shareholder Carbios announced signing a joint development agreement with Novozymes for the production and supply of enzymes for the manufacture of self-biodegradable PLA plastics. Under the multi-year agreement, Novozymes will upscale and implement the production process of Carbios' proprietary enzyme, committing to becoming its exclusive supplier of these PLA-degrading enzymes.

Carbiolice has successfully developed Evanesto, a powerful new enzymatic additive for producing PLA polymer compostable under domestic conditions. The range of commercial applications include single-use plastics for grocery and retail bags, rigid and flexible packaging for dairy applications, industrial food, disposable tableware and agricultural mulch films.

Read more > [BioPlasticsMagazine](#)

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