

RAIZ



Forest and Paper Research Institute

TECHNOLOGICAL
SCOUTING NEWSLETTER

April 2020

Highlights

Biocomposites related projects from VTT and Sappi.

New developments and applications for lignin by Avantium and Wageningen University & Research.



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START-UP OF THE MONTH

● Varden

Varden is a Melbourne-based start-up claiming to have re-engineered the basic structure of paper, making this material's performance comparable to plastic's. Varden says its technologies rely on the use of naturally molded plant pulp fiber, from agricultural and lumber waste, to create eco-friendly and high-performing packaging for a wide range of material applications. Oxygen barrier and water vapor barrier are said to be assured. One of Varden's disclosed product is the "Paperseal" coffee pods. Pharmaceutical blister packs are also mentioned by Varden.

Varden has now announced a 2.2 million € seed funding round by Horizons Ventures, a leading investor in some of the world's most innovative companies and disruptive technologies, including Facebook, Waze, Spotify and Zoom. This financing will help Varden to develop a pilot manufacturing facility to create its products at scale and to expand their offerings to a global market.

Read more ➤ [Varden](#) | [techcrunch](#) | [horizonsventures](#)



FOREST



photo: forest.fi

Luke: new indicator for comparing the different uses of forests

The Natural Resources Institute Finland (Luke) has developed an indicator for comparing the different uses of forests, considering different parameters from biodiversity, ecosystem services to timber production, to compare the impact of operations on each. The online Forest Indicator tool visualizes different impacts by using nearly 40 forest variables during different periods of time.

It can be used by anyone, from forest owners to forest planners, when assessing the impact of their operations in the forest. It is presented as a web page where users may view, for instance, the impact of felling plans by selecting the length of observation period, the felling scenario and the variables that they wish to examine. The results are presented as graphics, showing the proportionate values of the variables and the changes in them.

Read more ➤ forest.fi | [Luke](https://luke.fi)

BIOREFINERY



photo: ec.europa.eu

VTT: New EU project to replace plastics by natural fibres

Through an European Regional Development Fund, VTT and other 52 companies are expecting to move the production of plastic substitute fiber products to the scale of industrial production. Selected pilot areas, wherein the replacing of plastics is projected, are food packaging, filters, textiles, wiping, hygiene and construction materials, for example. A particular interest will be devoted to the production of new types of recyclable materials unharmed for the environment by tailoring bio-based fibre networks.

Read more > [VTT](#) | [kaleva.fi](#) | [ec.europa.eu](#)

● Technological
● Product Development



photo: Sappi

Sappi: Symbio bio-composite for reducing the environmental impact of motor vehicles

Sappi's Symbio bio-composite cellulose fibre will be applied as feedstock for the development of lightweight biocomposite materials in the Life Biobcompo project. This project aims reducing vehicle CO₂ emissions by 8% through the replacement of conventional mineral fillers with bio-based fibres and thus reducing the total weight of the car. The project gathers partners such as the SAPA Group, Fiat Chrysler Automobiles (FCA) Italy, Centro Ricerche Fiat and the Sòphia High Tech Group.

Read more > [Sappi](#)

● Technological
● Product Development

BIOREFINERY



photo:
BioMarkesInsight

Avantium: bio-based asphalt development with lignin

The Dutch renewable chemical technology company was awarded 0.5 million € for a new collaboration project, involving industrial and academic parties, for testing Avantium's lignin as a replacement of fossil-based bitumen in asphalt. During 2020 four test roads in the Netherlands are expected to evaluate the lignin-based asphalt application in large scale paving.

Read more > [BioMarketInsight](#)

● Technological
● Product Development



Wageningen University & Research: production of a more reactive lignin

The Dutch University and Research Center is starting a new research project aiming at three main objectives: to improve lignin reactivity and develop scalable processes for that; to know, for different range of applications, the relationship between fractionation conditions and lignin reactivity, and to create a value chain by collaborating with various non-competitive industrial partners. The first phase of the project is to be held from July 2020 to December 2021.

Read more > [Wageningen University](#)

● Technological
● Product Development

PACKAGING



photo: BillerudKorsnäs

BillerudKorsnäs: new technology for tailor-made shaped paper pods

Along with Syntegon Technology, a leading global process and packaging technology provider, BillerudKorsnäs is launching a new packaging system for tailor-made shaped paper pods, using BillerudKorsnäs's 3D formable FibreForm® paper. The technology involves filling and sealing machines, for producing the shaped paper pods with a filling volume of just a few and up to 100 milliliters, and the FibreForm paper is shaped by air pressure and embossed by press force. The new packaging system is ideal for individual portion packs and products such as cosmetics or samples and dry, chunky or viscous foods.

Read more > [PaperAge](#) | [Syntegon](#) | [BillerudKorsnäs](#)

● Technological
● Product Development



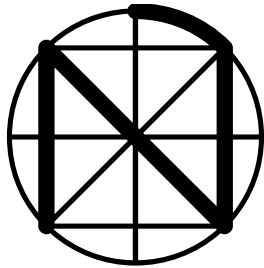
photo: VTT

Plastic-like packaging material from cellulose

VTT is cooperating with cheesemaker Denmark's Arla Foods, coffee and food producer Finland's Paulig Group and food and medical packaging manufacturer Finland's Wipak Group to accelerate the launch into the market of VTT's plastic-like and thermoplastic cellulose product, branded as Thermocell. The final application of thermocell will depend on how companies want to use it, and the next step in its development is to produce hundreds of kilos of the material and process it into various packaging prototypes defined by the companies. Thermocell is produced by adjusting the molar mass of cellulose in a controlled manner followed by a chemical treatment (functionalization) for finally producing a thermoplastic material. The collaboration project is expected to be completed by May 2021.

Read more > [VTT](#) | [BioMarketsInsight](#)

● Technological
● Product Development



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