MADE IN EUROPE WITH EUROPE'S NATURAL RESOURCES AND TECHNOLOGY

Cepi
BIOECONOMY LAB


AUTOMOTIVE & MOBILITY


CIRCULAR ECONOMY


E-COMMERCE SOLUTIONS


FIBRE-BASED CLOTHING


FOOD & BEVERAGE PACKAGING


FURNITURE & CONSTRUCTION


HEALTH & PHARMACEUTICAL APPLICATIONS


HYGIENE & COSMETICS


INDUSTRY 4.0

22 – 26 July 2024, Rome
COFO 27 and 9th World Forest Week by Food and Agriculture Organization of the United Nations (FAO)

23 – 24 September 2024, Brussels
Cepi Bioeconomy LAB

Cepi RENEWABLE RECYCLED RESPONSIBLE EUROPEAN

AUTOMOTIVE & MOBILITY

SUSTAINABLE FIBRE-BASED SEPARATOR FOR ENERGY STORAGE APPLICATION

A sustainable fibre-based separator that is used for energy storage application, such as lithium ion and sodium ion battery application. The fabrication process does not require any solvent or binder. The separator offers high temperature resistance and low shrinkage, eliminating the root cause of thermal runaway and fire. Our separator technology will bring safety to the whole battery pack.

AHLSTROM

AHLSTROM

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AUTOMOTIVE & MOBILITY

RENAULT X TENCEL™

TENCEL™ has been playing a key role in driving positive change in sustainability across various industries for many years and is now bringing its sustainable solutions into the automotive space through its collaboration with automobile manufacturer Renault.

To ensure the interior aesthetics of the new Renault Clio meet these changing expectations, a sustainable fabric which comprises of up to 60% TENCEL™ Modal fibres are developed for use in Renault Clio's Techno trim seats, door panels, and dashboard. Not only is the new Clio the first car to feature TENCEL™ Modal fibres but it is also the first time these sustainable fibres have been used extensively inside any type of vehicle.

The cellulosic fibre of botanic origins in TENCEL™ Modal fibres are known for their natural softness and efficient moisture management which provides enhanced breathability to car seat fabrics, supporting the body's natural thermal regulation and contributing to driver and passenger comfort. Apart from car seats, TENCEL™ Modal fibres can be applied to vehicle carpets and other interior applications.

Lenzing
Innovative by nature

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AUTOMOTIVE & MOBILITY

LIGNODE®

Lignode® by Stora Enso is pioneering the creation of bio-based hard carbon material derived from lignin, an existing by-product in the production of cellulose fibre. Lignode® aims to replace fossil-based or mined materials in battery anodes, helping the fast-growing battery business to become more sustainable. With this innovation, we can meet the growing demands for sustainable energy storage in an electrified future.

storaenso

Stora Enso

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AUTOMOTIVE & MOBILITY

UPM BIOPURA™ MEG: UPM BIOCHEMICALS AND HAERTOL

The mobility of the future will build on resource efficiency and radically improved CO_2 footprints in order to meet tightening regulatory environments and increasing consumer expectations. Electric Vehicles are the backbone of a more sustainable fleet. Every car needs several litres of coolants to maintain a consistent and safe temperature of engines and batteries. Current coolants are made from CO_2 intensive non-sustainable fossil-based chemicals. UPM BioPura™ can be used as the key raw material for engine coolant concentrates which usually consist of 95% MEG and 5% additives. In the future, car manufacturers can reduce the overall carbon footprint of the car by using UPM BioPura™ MEG based engine and battery coolants.

UPM

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AUTOMOTIVE & MOBILITY

ZAFI CYCLES

ZAFI CYCLES is the first Belgian-based company to offer custom-made wooden bicycle frames.

The choice of wood was, above all, a question of comfort. With conventional steel, aluminium or carbon frames, vibrations are transmitted through the frame to the rider, whereas wood absorbs them almost entirely. The cellular structure of wood acts like a chain of shock-absorbing springs while remaining rigid, ensuring unbeatable comfort when riding.

With a higher strength-to-weight ratio than steel, wood can be used to create lightweight bikes that meet the ISO4210-6 standard. This standard simulates 10 years of life (3 fatigue tests and 2 impact tests) and ensures "the resistance and durability of the various components and of the bicycle as a whole". It demands high standards of quality at all levels and takes safety aspects into account from the earliest design phases.

In addition to its interesting technical properties, wood's pure, natural and warm style gives the bike a charm and design that no other material can offer. Each bike has a soul, is unique and has its own story.

ZAFI

Zafi Cycles

Belgium

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CIRCULAR ECONOMY

TEXFABRIK: COMBINING TEXTILE FIBRES (20%) OF POST-CONSUMER TEXTILE FIBRES TO AVOID LANDFILL

This 100% recycled paper contains 20% cotton dust from the spinning process, which is typically discarded as waste through landfilling or incineration. It meets standard specifications for mechanical, structural, and water absorption properties and is validated for high-quality printing. Additionally, the paper has a notably softer texture.

Alier

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CIRCULAR ECONOMY

ACETIC ACID FURFURAL

Caima mill from Altri group aims to establish itself as one of the few companies that can recover acetic acid and furfural from its evaporation condensates, a side stream that can be found in its dissolving pulp production process. It will be the first of a kind plant while using Eucalyptus globulus wood as raw material. This project aims to diversify Caima products, to reach new markets and to increase its sources of revenue. Using its side-streams has several advantages: (i) the economic use of these compounds in the chemical industry and (ii) the reduction of the organic load for effluent treatment, replacing a cost by the high value of these compounds in international markets.

Portugal and the European Union (EU) itself are significant importers of acetic acid and furfural, so the project will promote a more efficient response to the high demand for these products. The acetic acid market is projected to grow 5.2% year-by-year to exceed USD 14 billion in 2025, driven by a growing demand for vinyl acetate and increased use of esters in the paints and coatings industry. In parallel, the furfural market is expected to reach USD 2.5 billion in 2026, driven by a growing demand for sustainable chemicals and renewable alternatives to replace fossil resources, in addition to the increase in demand from the pharmaceutical sector.

Altri

Portugal

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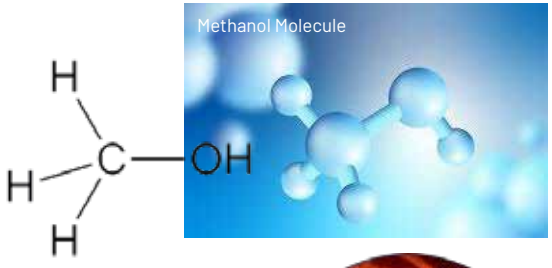
CIRCULAR ECONOMY

BIOMETHANOL TO KILN

The world's annual consumption of methanol is around 92 million tonnes, mostly from natural gas sources, which is directly related to greenhouse gas emissions. Green/ Renewable methanol, mainly as biomethanol, currently accounts for less than 0.2 million tonnes. In the future, green methanol production is expected to increase, in order to help reduce the dependency on fossil fuels and mitigate greenhouse gas emissions. Green methanol reduces CO_2 emissions by up to 95% and can be used as a low-carbon liquid fuel, making it a promising alternative to fossil fuels in areas where decarbonisation is still a major challenge, such as shipping.

Biomethanol is originates from the gasification of sustainable biomass sources or as a side product from Kraft pulping process. The biomethanol generated in Kraft process is the main volatile organic compound present in black liquor, which is later recovered in the condensates of the evaporation plant. This biomethanol can be recovered and purified and represents an interesting opportunity for our sector.

Currently, Celbi recovers and purifies up to 80% of the biomethanol generated in the kraft process and uses it as fuel in the lime kiln, replacing natural gas.



Kraft Pulp Mill
- Lime Kiln Renewable Fuel

Road Biofuels

Maritime Biofuels

Altri

Portugal

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CIRCULAR ECONOMY

CAIMA GOGREEN
(100% RENEWABLE PULP PLANT)

Caima discontinues the use of fossil fuels in its production process, becoming one of the first in the industry to achieve this historic milestone. This project will maximize the generation of electrical biomass, ensuring the factory's steam needs, allowing for increased production levels. This investment will also enable new innovative specialty projects, such as the production of acetic acid and furfural - these green compounds can be marketed with high added value.

The biomass plant was designed, planned and built based on the latest concepts and technologies, in order to guarantee the greatest reliability and economy, maximum availability, a high degree of automation, minimised environmental impact, fulfilment of the most rigorous safety requirements for people and facilities and strict compliance with hygiene standards and best practices.

Summary of the plant's main features:

- Deployment area: 2600 m2;
- Chimney height: 50 mt;
- Max. height of boiler building: 40 mt;
- Thermal power:76 MWt ;
- Steam production: 90 t/h (25 kg/s, 90 bar(a), 480 °C);
- Boiler's thermal efficiency: 88,5 %;
- Steam flow at turbine inlet: 48 t/h;
- Generator output 4,95 MWe;
- Generator voltage: 3,3 kV.

Altri

Portugal

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CIRCULAR ECONOMY

EFLUENT RECYCLING

Like in the human body, material and energy circulation in a cellulose based biorefinery is made in a complex piping network. Fluid is water and not blood, but in both cases, we can´t waste it. MBBR waste-water treatment plants with membrane ultrafiltration technology, allows Altri kraft pulp mills not only to accomplish with environmental limits, but also start looking at waste-water recirculation.

Near zero suspended solids on WWTP filtrate is a good first step for recirculation, allowing us to keep our 2030 Altri target of water use at 10 m^3/ADt.

Waste water in

Waste water out

Membrane tubes

Membrane pores
0,04µm

Altri

Portugal

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CIRCULAR ECONOMY

LIGNOSULFONATES

Lignosulfonates are versatile, water-soluble polymers that can provide various functionalities depending on their molecular weight, degree of sulfonation, amphiphilicity, purity and other factors. These biopolymers are particularly useful as dispersants, binding agents and emulsion stabilisers. Lignosulfonates are also inherently biodegradable, non-toxic and renewable, making them a sustainable alternative to synthetic polymers. Their properties make them ideal for a broad range of industrial applications, including Agriculture, Animal Feed, Biomass Pelleting, Ceramics, Dust Control, Cement Admixtures in Construction, Paper Sizing, Resins and Adhesives, Food Aromas, etc.

Altri's Caima mill currently produces 55 000t/a, as a side-stream from its Acid Sulphite Dissolving Pulp mil, from where it sells this product worldwide for its different applications.

Vanillin


Dried Lignosulfonate


Animal Feed


Cement Admixtures


Ceramics


Dust Control

Altri

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CIRCULAR ECONOMY

WOOD FINES FOR PULPING

A new continuous cooking of wood fines, rejects and non-wood materials was installed at Altri's Celbi pulp mill. It is the first of its kind in the world and can process and utilise almost any type of cellulosic raw material and fines from chip screening and screen room rejects, thus optimising total use of wood raw materials and maximising pulp yield. With the new cooking system, Altri is able to increase its daily production at the Leirosa mill by around 2.5% and reduce wastage of wood raw materials. The new cooking system reached its nominal capacity of 60 admt/d.

In addition to the direct economic impact achieved through the reduction of wood consumption, there are other sustainability benefits that resulted from this project:

a) reduction in wood transport costs and impact of associated CO_2 emission;
b) internalising waste and promoting a circular economy;
c) application of the Wood Value Waterfall Concept.

Altri

Portugal

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CIRCULAR ECONOMY

COCOA PAPER™ FOR SWM/LEAFLAB

Cocoa Paper™ is a new range of food contact materials made with a high inclusion rate of recycled cocoa shells. LeafLAB has developed a unique cocoa fibre which can be used for paper and board manufacturing and create tailored solutions applicable for many industries: chocolate, confectionery, bakery, decoration, graphic and tableware!

A range of concepts are available using the unique Cocoa Paper™ in innovative ways. This specialty paper is a perfect match for luxury, all-natural food packaging and can elevate your product with its multi-sensory benefits. Not only do these specialty botanical packaging materials provide an eco-efficient image, they can differentiate your product in the market.

SCHUTPAPIERI

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CIRCULAR ECONOMY

JEANS PAPER AND BOARD

New at Schut Papier, a circular economy paper exists, made from 50% of fibres obtained from recycled jeans.

Our company in the Netherlands has good contacts with the manufacturers of clothing in general and especially in jeans. These supply the company with overdue jeans (not fashionable anymore). These jeans are teared apart which results in fibres of different length. The long fibres are used to spin yarn again and produce pullovers etc. The smaller fibres are used to make nice fashionable shopping bags. The smallest fibres and the dust (which occurs during the tearing process) is used to make our beautiful paper and board. The jeans paper and board is made of 50% wood-free FSC-certified cellulose and contains 50% of fibres obtained from recycled jeans. The lower grammages (120 and 240 g/m^2) are used in the hobby market and also to make luxury shopping bags. The 350 g/m^2 board is used to make luxury boxes or labels for jeans. Circular economy at its best!

SCHUTPAPIER!

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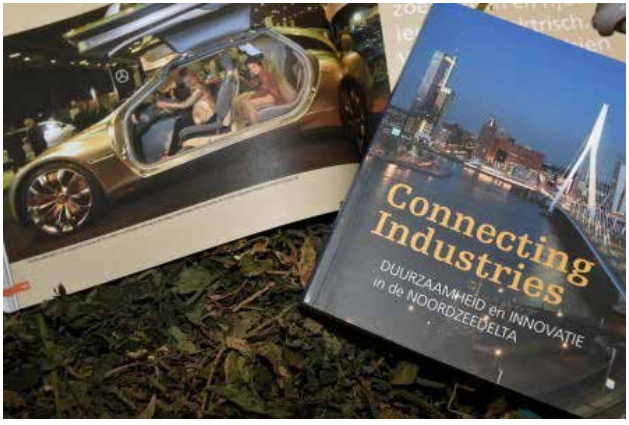
CIRCULAR ECONOMY

PAPER MADE WITH FIBRES FROM LOCAL AGRICULTURAL HORTICULTURE

After two years of development, Schut Paper launched Valorise. This paper is the result of collaboration with growers, knowledge centres and universities for the circular value of fibres from agricultural residues such as tomato plants. The optimal scenario is that agricultural residue (e.g. tomato and pepper crops) is not composted, but that 100% is used as raw material for the paper sector and as an ingredient for other industries. The processing of these agricultural fibres and the unique formula of Schut Paper has produced a very attractive paper with high tactile and visual value, in which the fibres have a very subtle presence.



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CIRCULAR ECONOMY

PAPER MADE WITH FIBRES FROM TULIP BULBS

After one year of development, Schut Paper launched, together with a grower in Northwest Netherlands a paper and board made with 20% tulip bulbs. This paper is the result of collaboration with a grower, his customer and the people of the laboratory at Schut Papier. Previously, the overproduction of a very special tulip bulb was destroyed because these bulbs were supposed to be sold only to a certain customer in the USA. Nowadays, the tulips are refined and mixed with FSC cellulose. The tulip bulbs are 100% used as raw material for this paper. The processing of these agricultural fibres and the unique formula of Schut Paper has produced a very attractive paper with high tactile and visual value, in which the fibres have a subtle presence.

SCHUTPAPIER!

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CIRCULAR ECONOMY

LENZING™ ACETIC ACID BIOBASED

Lenzing AG produces LENZING™ Acetic Acid Biobased as a biorefinery product from beech wood. It is purified in several steps and processed into high quality, food-grade Acetic Acid with a characteristic fruity smell. The product is free from solids and of high purity, making it suitable for human consumption. LENZING™ Acetic Acid Biobased is also used in a full range of applications including the pharmaceutical and feed industries, and acts as a basic chemical in various fields. It can be offered in varying concentrations, typically between 60% and 100%. Packaging only in bulk. LENZING™ Acetic Acid Biobased has a carbon footprint which is more than 85% lower than that of fossil-based acetic acid.

Lenzing
Innovative by nature

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CIRCULAR ECONOMY

LENZING™ SODIUM SULPHATE

LENZING™ Sodium Sulphate is a co-product of the continuous process of viscose and modal fibre production and as such is available in consistent quality and stable quantity all year round. The quality-controlled production route leads to sodium sulphate with higher levels of purity as compared to unrefined sodium sulphate. LENZING™ exemplifies the practice of circular economy, the ecological principle that unwanted material output from any process is not treated as waste, but converted to a raw material that can be used as input to another process, in different ways. Lenzing creates co-products during the production process by transforming such material output into value-adding co-products.

Lenzing
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CIRCULAR ECONOMY

CIRCULAR BIOFERTILISERS, BITUMINOUS AND CEMENTITIOUS MATERIALS FROM KRAFT PROCESS RESIDUES

Residues from the kraft pulping process area being transformed into added-value products at The Navigator Company. These include ashes, biological sludges, lime sludges, grits and dregs. Biofertilisers and soil pH amendment products have been developed from ashes, biological sludges, lime sludges, grits. Bituminous and cementitious (including concrete and mortars) materials have been developed using ashes, grits and dregs. These products reached a prototype scale at industrial relevant context.

The Navigator Company

Portugal

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CIRCULAR ECONOMY

SHINGUARDS MADE WITH UPM BIOMOTION™ RENEWABLE FUNCTIONAL FILLERS RFF

UPM has developed a completely new class of renewable functional fillers, which enables a switch from fossil raw materials to a sustainable alternative: UPM BioMotion™ RFF. It combines a unique set of properties for rubber and plastic applications enabling the next step towards a more sustainable future. It is made from responsibly-sourced hardwood from regional, sustainably-managed forests and will be produced at UPM's award-winning, first-of-its-kind biorefinery in Leuna, Germany, for which start of production is planned by the end of 2024.

UPM

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CIRCULAR ECONOMY

UPM SOLARGO™ NEW BIOSTIMULANT PRODUCT RANGE AS A LONG-TERM SOLUTION FOR SUSTAINABLE AGRICULTURE

The new range of bio-based plant stimulants, UPM Solargo™ marks UPM's entry into the large and profitable agrochemicals market with an innovative, sustainable alternative to fossil raw materials-based products.

UPM Solargo™ biostimulants are a highly innovative solution for sustainable agriculture providing scientifically proven benefits for a broad range of crops cultivated in fields and greenhouses with a significantly optimised environmental footprint compared to incumbent fossils-based products. They aid plant growth by improving the quality of soil microbiome and by increasing water retention.

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E-COMMERCE SOLUTIONS

NATUREWRAP: PAPER SOLUTION FOR PALLET WRAPPING, TO REPLACE STRETCH PLASTIC FILM

This lightweight, 100% recycled crepe paper provides consistent protection and effective cushioning. It is ideal for pallet wrapping and serves as an eco-friendly alternative to stretch plastic film.

Alier

Alier SA

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E-COMMERCE SOLUTIONS

PAPAIRWRAP - THE BUBBLEWRAP MADE OF PAPER

As a start-up, we develop innovative technologies for the production of sustainable packaging materials. The first of these technologies enables the production of "PapairWrap", a bubble wrap made exclusively from paper. PapairWrap combines sustainability, reliable cushioning properties and cost efficiency like no other packaging material. It is a sustainable alternative to conventional packaging materials and can be used for almost all products that are packed and shipped.

Our production site is in Rethem an der Aller, because we value local production. We have been producing bubble wrap made of paper in-house since June 2023.

papair

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E-COMMERCE SOLUTIONS

PAPIRA®

Responsibly-sourced, biodegradable in home compost, and sustainable through its entire lifecycle, Papira® is made of wood fibre from sustainably managed Nordic forests. Rigid, and with excellent shock absorbing properties, it is suitable for a wide variety of application needs from industrial, electronic and medical equipment to fragile goods such as glass, arts and antiques. Papira® is fully recyclable with paper and board materials, allowing it to be part of a circular material flow in existing packaging waste management systems all over the world.

StoraEnso

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E-COMMERCE SOLUTIONS

FLEXI-PROTECTOR

Flexi-protector is a cardboard insert, created mainly for the e-commerce market. Its main purpose is to provide a high level of protection to a wide range of goods, regardless of their shape. Products placed inside the insert are wrapped in cardboard, and side flaps. Two of these side flaps are folded up while the other two are folded down. This creates protecting buffers to save product in case of drop. The top and bottom panels have slits to reduce tension and to help those panels fold properly around the product. The insert can by placed in any type of popular shipping or e-commerce boxes.

Werner Kenkel Bochnia Sp. z o.o.

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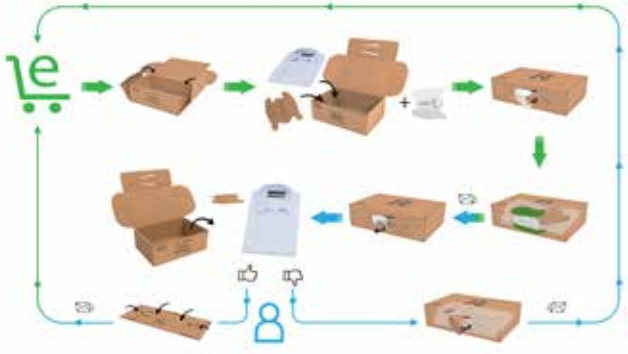
E-COMMERCE SOLUTIONS

R-PACK

R-Pack redefines the way we think about e-commerce delivery solutions, introducing the idea of multiple use cardboard packaging. Thanks to a PATENTED system of stand-alone cardboard locks and dedicated slots at the front of the R-Pack box, it can be easily locked, providing a high level of protection. The R-Pack box can be used multiple times and offers an acceptable level of strength, durability and product protection. A customer can easily open the box, check the product and return it if they are not satisfied by using the returning lock placed inside the box by the sender. If the customer wants to keep the product, they can easily return the empty box to the sender. The box can be disassembled by unlocking the side panels and folded down to a compact, self-locking and space saving shape. In this form the box can be passed to the courier or placed inside the locker. The R-Pack box returned to sender can be then reused with a new set of locks. When the R-Pack box reaches the usage limit, it can be easily recycled.



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E-COMMERCE SOLUTIONS

VERSATILE BOTTLE PROTECTOR

A bottle protector with integrated separators, made of a single sheet of cardboard and pre-glued. Each bottle is placed in a separate cell. The top and bottom flaps form remove buffers, protecting bottles in case of a fall. Thanks to a locking system, flaps are securely closed, so there is no risk of a bottle falling out of the protector. The protector, or set of protectors, can be placed inside the outer case to create durable e-commerce pack. It can be used to store and protect bottles in the warehouse or in shops.

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E-COMMERCE SOLUTIONS

CARBOARD PROTECTING FILLER

This protective filler made entirely of cardboard was developed as an alternative solution for currently used protective fillings that are mainly made of polystyrene or other plastics. This is a solution made of ecological material, biodegradable, and ready for recycling. The cardboard filler offers a complete product protection with only four modular parts. Each of them has a locking channel and buffer crumple zone, protecting the product against mechanical damage, also in the event of a fall. The filler can be quickly and intuitively formed by hand into a spatial form. Compared to plastic fillers, this construction requires no changes in the packaging process at the manufacturer.

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E-COMMERCE SOLUTIONS

RESHAPE

This reshape-packaging made of 2-ply paperboard, dedicated to e-commerce uses about 30% less paper than standard 3-ply packaging. This can generate huge savings globally, reduce the carbon footprint in the production and supply chain, and reduce the consumption of natural resources. The flute direction (45-degree angle) makes the structure durable during transportation. The open flute inside prevents product movement and protects it. Very importantly, 3 solids can be formed from 1 blank - an envelope, a pillow and a cube. This allows you to adjust the shape and size of the package adequately to the contents, which is very useful when returning shipments. This reduces empty spaces in transit, which is in line with the European Commission's latest project to reduce the size of e-commerce parcels. In addition, the system of integrated, adaptable dividers makes it possible to properly secure the goods - without the need for bubble wrap. Another advantage is the inserts extracted from the sheet waste, which consumers can use for additional protection of the contents. Self-adhesive paper stickers are used for sealing. The packaging can be reused many times in a closed cycle.

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FIBRE-BASED CLOTHING

FROM EUCALYPTUS WOOD TO TEXTILE FIBRES

Even existing a long time ago, wood-based textile applications are now a fast-growing market where European companies like Altri have a word to say. Following a 4 years R&D work we find out that our Eucalyptus globulus dissolving pulp is suitable to produce Lyocell fibres and process optimization was sucessfully achieved. Being on the dissolving pulp market for more than 10 years, on 2022 Altri produced its first 100% eucalyptus Lyocell filament fibres in a pilot scale installation.

Beyond fibre production, with titre and characteristics close to commercially available fibres, we also made advances on fibre modifications to allow traceability and fire resistance.

In a close cooperation with Citeve&Centi, the R&D Centers for the Portuguese textile industry, this project is now on new a phase of scaling-up the fibre capacity production.

Lyocell spinning line

Lyocell fibres

Altri

Portugal

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FIBRE-BASED CLOTHING

KUURA® FIBRE

Environmental responsibility and circular economy lie at the heart of producing this unique textile ingredient, Kuura, moving the world towards a more sustainable future. Our textile fibre brings a responsible alternative to various end uses in the world of textiles.

The Kuura fibre is made out of pine and spruce from certified, sustainably-managed, Finnish forests. By integrating the textile fibre production directly to the bioproduct mill we are able to utilise the environmental friendly industrial ecosystem and make the production of Kuura fibre efficient and fossil-free as well.

Metsä

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FIBRE-BASED CLOTHING

DISSOLVING PULP

Dissolving pulp (DP) is a purified cellulose pulp suitable for subsequent chemical conversion into a range of products. Cellulose – the most common biopolymer on earth – is the structural component of the cell walls of green plants.

DP can be spun into textile fibres, cast into a film or regenerated into a sponge. Derivatisation of the DP without dissolution can also produce a wide range of products with different functionalities, e.g. cellulose ethers.

DP 91-95% cellulose content is mostly used to make viscose fibres for use in textiles. Higher cellulose content DP is used to make rayon yarn for industrial products such as the cord used in tyres, rayon staple for high-quality fabrics, acetate and other speciality products. Most of the DP Sappi produces is used to make cellulosic fibres-fashion and decorating textiles.

Some of these samples provide audiences with an idea of what the final converted products (derived from DP raw material) could be. However, it is important to note that Sappi's DP is used and chemically converted by other manufacturers, in order to produce the final products within the long value chain.

sappi

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FIBRE-BASED CLOTHING

NEW LEATHER-LIKE MATERIALS BASED ON CELLULOSE

New materials produced from cellulose, that emulates animal-based leather are being developed in our labs, in cooperation with AlmaScience CoLab. Our R&D programme reached the prototype phase, with very promising results. Product optimisation and production scale-up will follow in the next few months.
Several patents are under preparation.

The Navigator Company

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FOOD & BEVERAGE PACKAGING

THE PURE-PAK® SENSE CARTON

Pure-Pak® Sense is a great choice for low- and high-acid products, such as milk, juice, plant-based drinks, and soups. The carton comes in a variety of sizes and cross sections, from 118 ml up to 2000 ml.

ELOPAK

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SIG

Variety of tasty juices! At Riedel we live and breathe fruit juice, where taste, quality and sustainability always come first. We do this with many well-known brands such as Appelsientje, CoolBest and DubbelFrisss. With this, Riedel is the market leader in the Netherlands in the category of fruity drinks.

SIG

Riedel and SIG
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FOOD & BEVERAGE PACKAGING

SUSTAINABLE PACKAGING BOARD, FROM RENEWABLE SOURCE. AN ALTERNATIVE FOR PLASTIC SNACK TRAYS

The FOLLBB Group produces folding boxboard from virgin fibre material at two locations in the heart of Europe. The barrier board is fluorine free and no PFAS is used for its production, Sausages, fries and other snacks can leave their natural fats on the packaging; so it is imperative to guarantee stability and prevent discoloration as well as annoying grease stains. Thanks to its combined moisture and grease barrier, the Freeze Grease III carton board satisfies these requirements perfectly. Carton board is completely recyclable and biodegradable.

As a special project and to help local sports clubs remove single-used plastics from their canteens, FOLLBB Group has developed its own snack trays. Regional sports clubs and also local event organisations at the factory in Eerbeek have the opportunity to start using these trays free of charge. In doing so, FOLLBB encourages the reduction of the use of single-used plastics in its own region.

FOLBB
virgin fiber cartonboard made personal

FOLLBB Group
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FOOD & BEVERAGE PACKAGING

TWIN PIZZA BOX

International Paper's Twin Pizza Box: This innovative design for pizza boxes allows for transporting two pizzas in the space of one. Its unique structure enables easy access to both pizzas during consumption. It offers cost savings as well as greater logistical efficiency by saving space and reducing the assembly time of the box from two units to one unit. Moreover, this design uses 17% less cardboard compared to two traditional pizza boxes, ensuring better resource utlisation. Finally, the box includes two detachable triangles that can be used as plates for enjoying the pizza slices. The packaging won an award in the ecommerce category at the Worldstar Packaging Awards 2024 and an award for the best food packaging at Spanish Liderpack 2023.

International Paper

International Paper

Spain, Belgium

Claudia Brand
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FOOD & BEVERAGE PACKAGING

LENZING™ FOR PACKAGING

LENZING™ for Packaging surrounds food and other goods in naturally durable and biodegradable fibres that are of botanic origin and certified safe for food contact.

Sustainably-produced and fully compostable after use, LENZING™ cellulosic fibres are suitable for a varied range of packaging applications, from tea bags and coffee pods to botanic nets and reusable bags.

Lenzing
Innovative by nature

Lenzing AG
Austria
Carina Winter
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FOOD & BEVERAGE PACKAGING

MUOTO FOOD TRAYS

Modern lifestyles depend on packaging. The most responsible option can be found in nature. The raw material for our new Muoto® products grows in sustainably managed northern forests. Sustainable product innovation makes Muoto a perfect substitute for plastic – for example, in many food packages.

Muoto is a three-dimensional easily recyclable packaging product made from wood. With novel technology, we manufacture the products fit-for-purpose, depending on the application. Light but strong Muoto products have a smooth look and feel, and they are adaptable to countless end uses.

Muoto's production has been logistically optimised. The entire process from wet pulp to the finished packed product is integrated into one production line. The resource efficiency of the production technology has been honoured at the highest level – raw materials and water circulate in the process, and no waste is generated from production running on 100% fossil-free energy.

Metsä

Metsä Group
Finland
Eevi Huhtamaa
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FOOD & BEVERAGE PACKAGING

BRUNBERG ORANGE KISS

In a facelift, the plastic window has been removed from the lid, reducing plastic consumption remarkably. The box is now made entirely of cartonboard. The same packaging change will be made to the entire range of foam sweet flavours by the summer. The plastic window has been a visual element in these packages and has been difficult to recycle separately. With the packaging reformulation, Brunberg is one step closer to the goal of reducing the use of plastic material in packaging.

The new product package will be recycled in its entirety for cartonboard collection. The redesigned cartonboard package is a result of a fruitful collaboration between the brand owner, the package converter and the producer of cartonboard raw material. The new package for these Brunberg sweets is converted by Pyroll Packaging and it is made from ALASKA® STRONG folding boxboard produced at MM Kotkamills.

MM BOARD & PAPER

MM Board & Paper (Mill: MM Kotkamills)
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FOOD & BEVERAGE PACKAGING

GIN PACKAGING FROM SPIRIT BROTHERS

With its sophisticated design which does not obscure the view of the elegant bottle, the Belle Rive Gin packaging reliably protects the product from damage while eschewing adhesives altogether. As the smooth surface of the virgin fibre cartonboard from MM Board & Paper (ALASKA® STRONG) can be printed with the utmost precision, the bottle and packaging design complement each other in a sleek look.

Exceptionally convenient: The entire construction, developed by Lucaprint, can be carried safely using the built-in cord, and can also be transformed into an eye-catching feature at the point of sale.

MM
BOARD & PAPER

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FOOD & BEVERAGE PACKAGING

MCDONALD'S DELIVERY CUFF

Every day, McDonald's stores in the UK receive hundreds of thousands of online orders. While its prepacked delivery bags used to be sealed with a plastic sticker, they are now held closed with a practical closure made of recycled cartonboard Browncolor from MM Board & Paper. The delivery cuff, developed by Huhtamaki, consists of a folding carton board with two adhesive strips on the back that protect the contents against tampering. After delivery, the customer can open the bag with ease using the two tear strips.

The box closure isn't just a more sustainable solution for the safe delivery of McDelivery products; it can also be packed completely flat, thus saving on logistics costs and CO_2 emissions.

MM BOARD & PAPER

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FOOD & BEVERAGE PACKAGING

TRAYWRAP – PAPER ALTERNATIVE FOR FOOD AND BEVERAGE PACKAGING

TrayWrap is Mondi's paper alternative to plastic tray wrapping. It uses Advantage StretchWrap, which is characterised by excellent stretchability and high tensile strength, even at the low grammage of 70 g/m^2, making it a reliable, lightweight wrapping solution for transporting products. The uncoated kraft paper used for this solution is made from 100% responsibly sourced fresh fibres. The properties of the paper ensure that the contents are secure during handling, storage transportation and protect the pack in terms of quality and shape. TrayWrap can be used for folding boxes, liquid cartons, vacuum packs, cans, cups and other products. The paper wrap is used to keep the goods secure during transport and is removed at the POS. The kraft paper contains no coating and is recyclable in existing paper waste streams.

Mondi AG

Sweden

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FOOD & BEVERAGE PACKAGING

REPLACING PLASTIC READY-TO-EAT FOOD TRAYS WITH FIBRE-BASED ALTERNATIVES FROM WELL-MANAGED NORDIC FORESTS FOR A SUSTAINABLE FUTURE.

Rottneros Packaging's invention is to use CTMP pulp from well-managed Nordic forests to form smooth, strong, lightweight, microwavable food trays and apply a thin layer of plastic to meet the barrier requirements for ready-to-eat food with an extended shelf life. The plastic content is 10% of the entire packaging weight, meeting the new packaging and waste directive requirements from the European Union (PPDW). Further, the product can easily be separated since we have applied a peel-tab in the design so the consumer can separate the fibre tray from the plastic liner for successful material sorting and later recovery. The smooth surface of the tray, coming from the CTMP pulp and the thermoforming technology used, gives an excellent surface to print on making the package's need for a label less while still being able to communicate the needed information to the consumer.

With this invention we can reduce the amount of plastics used.

ROTTNEROS

Rottneros Packaging AB
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FOOD & BEVERAGE PACKAGING

AVANTGUARD S NATURAL

Uncoated paper with heat sealable and high barrier coating on the reverse side. Designed for various flexible packaging applications, such as flow-wrap, sachets and pouches for the food and non-food markets. Its benefits include high efficient food safety, a high barrier against oxygen, water vapour, grease, MOSH/MOAH and aroma, and it is chlorine free. It is recyclable in the paper waste stream.

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FOOD & BEVERAGE PACKAGING

GUARD MS NATURAL

Uncoated paper with heat-sealable and mineral oil barrier coating on reverse side. Designed for stand-up pouches, pillow-bags, block-bottom bags for tea, seeds, flakes, flour, rice etc. This environmentally-friendly, integrated paper-based solution offers sustainable barriers against mineral oil, grease resistance (Kit 12), heat sealability, good printing results and openability, and is recyclable in the paper waste stream. It is a food-safe packaging material that gives a natural look and feel.

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FOOD & BEVERAGE PACKAGING

GUARD OHG NATURAL & SILK/GLOSS

Uncoated paper with heat sealable and high barrier coating on the reverse side. Designed for various flexible packaging applications, such as flow-wrap, sachets and pouches for the food and non-food markets. This integrated paper-based solution is based on >80% renewable resources, offering high barrier against oxygen, water vapour, grease, MOSH/MOAH and aroma. It's heat sealable, recyclable in the paper waste stream, suitable for direct food contact & offers good printing results, openability, a natural look and feel and superior optical appearance.

One-side single coated silk or gloss paper with heat sealable and high barrier coating on the reverse side. Designed for various flexible packaging applications, such as flow-wrap, sachets and pouches for the food and non-food markets.

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FOOD & BEVERAGE PACKAGING

SEAL SILK

One-side single coated silky paper with sealable coating on the reverse side. Designed for standard flexible packaging in the food and non-food markets, which requires heat sealing properties (primary and secondary packaging). It has superior heat sealability and moisture barriers, offers excellent optical appearance, good printing results and openability, and is recyclable in the paper waste stream. This is an environmentally-friendly solution that gives a natural look and feel, and is suitable for direct food contact.

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FOOD & BEVERAGE PACKAGING

INNOVATIVE MOULDED CELLULOSE PRODUCTS FOR FOOD PACKAGING AND FOOD SERVICE, ENTIRELY PRODUCED WITH EUCALYPTUS FIBRES

Innovative moulded cellulose products for food packaging and food service, entirely produced with eucalyptus fibres, bearing barrier properties, replacing SUPs in food sector, were developed by The Navigator Company. Product development, formulations, and production scaling-up was done at the labs and pilot facilities of RAIZ, the R&D Centre of the Company. A new moulded cellulose products mill will start-up at Navigator Aveiro mill, with an initial production capacity of 100 M items/year. This will be the first mill producing moulded cellulose articles with 100% eucalyptus fibrous material.

THE NAVIGATOR COMPANY

The Navigator Company

Portugal

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FURNITURE & CONSTRUCTION

AQUAGUARD: HYDROPHOBIC PAPER FOR CONSTRUCTION

This 100% recycled paper with a hydrophobic treatment is designed to be porous enough for gypsum board production. This paper meets the specifications for low-absorption H1 boards and enables a reduction in the use of siloxanes or waxes in the gypsum core.

Alier

Alier SA

Spain

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FURNITURE & CONSTRUCTION

HIGH PERFORMANCE SOLUTION PAPER: SUSTAINABLE AND COST-EFFICIENT SOLUTION

This 100% recycled paper is treated with a specialised process that reduces its weight by 20g/m^2 while preserving its mechanical properties. The benefits of using this paper include increased coverage per tonne, energy cost savings, more efficient manufacturing processes, reduced transportation and import fees, and lower warehouse space requirements.

Alier

Alier SA

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FURNITURE & CONSTRUCTION

Kerto® LVL

Kerto® LVL is structural laminated veneer lumber used in all types of construction projects, from new buildings to renovation and repair. Kerto LVL combines excellent technical performance with ease of use. Its essential qualities include strength and rigidity, dimensional stability and light weight.

Kerto LVL is produced from 3 mm thick rotary-peeled strength graded softwood veneers. The veneers are bonded with weather- and boil-resistant phenol formaldehyde adhesive to form a continuous billet. The billet is cut to length and sawn into LVL beams, planks or panels according to customer´s requirements.

Metsä

Metsä Group

Finland

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FURNITURE & CONSTRUCTION

NEOLIGNO®

NeoLigno® by Stora Enso is a bio-based binder made from lignin without formaldehyde and isocyanates, providing healthier indoor and working environments. It's a two-component product that combines a lignin-based binder and a bio-based hardener. NeoLigno® is a suitable binder for wood products and mineral wool, and allows more sustainable products to be made without compromising on technical performance.

Stora Enso

Finland

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FURNITURE & CONSTRUCTION

INNOVATIVE THERMOPLASTIC BIOCOMPOSITE MATERIALS

Innovative thermoplastic biocomposite materials have been developed by The Navigator Company, composed by machanically-treated eucalyptus fibres and bio- or fossil-derived thermoplastics. The production process has been scaled-up at the labs and pilot facilities of RAIZ (production scale 100 Kg/h), the R&D centre of the company. New biocomposite formulations are now being tested with potential industrial end-users such as injection-moulding industry, packaging, consumer goods, automotive industry, textile and 3D printing filaments. Several patents submitted/filled.

The Navigator Company

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FURNITURE & CONSTRUCTION

RFF POWDER WITH A PIECE OF THE ARTIGO FLOORING

Artigo, an international rubber flooring company, will produce their next-generation flooring collections from 2025 with UPM BioMotion™ Renewable Functional Fillers (RFF). By incorporating UPM Biochemicals' RFF, Artigo has achieved CO_2 footprint savings of up to 0.5 kg CO_2e/sq. metre and managed to reduce the weight by up to 5% per square metre flooring.

UPM

UPM
Germany
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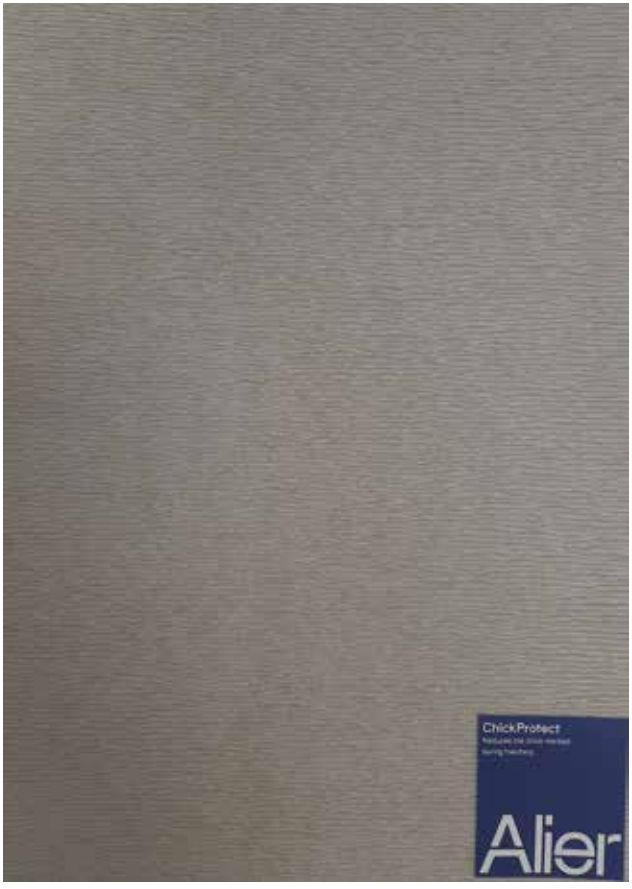
HEALTH & PHARMACEUTICAL APPLICATIONS

CHICKPROTECT: TO REDUCE THE CHICK MORTALITY DURING HATCHERY

This 100% recycled crepe paper is utilised as flooring in livestock management and the poultry industry. It effectively attracts day-old chicks, guiding them towards water and food sources. This results in more vigorous chicks, accelerated growth, and reduced mortality during their first week of life.



Alier

Alier SA

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HEALTH & PHARMACEUTICAL APPLICATIONS

HEXOR® SPLINT

HEXOR®, a splint made from recyclable cellulosic material, is adaptable for comfort and immobilisation. Delivered flat, it is quick and easy to install and replaces plasters and resins. The monitoring and renewal of dressings is facilitated thanks to the concept of fast-closing straps. Without any metal parts, it is perfectly suited for MRI and X-rays. HEXOR® adapts to the anatomy of the leg thanks to its soft back. Its stabiliser limits any rotation of the rested leg.

HEXABIO RETAIL

France

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HEALTH & PHARMACEUTICAL APPLICATIONS

PA + PULPAC BLISTER PACK COLLECTIVE

The Blister Pack Collective from PA and PulPac has joined forces with leading brand partners (including Bayer, Haleon, and Sanofi) to create the world's first Dry Moulded Fibre blister pack.

The Blister Pack Collective utilises Dry Moulded Fibre (DMF) technology to develop blister packs that eliminate or minimise the use of plastics in over-the-counter prescription drugs and nutraceuticals.

DMF technology significantly reduces the use of plastics and water, cutting carbon emissions. The process is designed to be high speed and low cost, using a proprietary "continuous rotary formation" process to create highly versatile tablet arrays that match the pitch design and tablet count of commodity blisters. Our first prototypes support a like-for-like, scalable solution with a 10 per minute production speed. The first products on the market will boast a 90+% plastic reduction, a variety of barrier solutions, and equal cost and production volumes of today's plastic blisters.

PulPac

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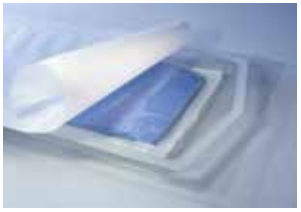
HEALTH & PHARMACEUTICAL APPLICATIONS

ENGINEERED PAPER FOR STERILE MEDICAL DEVICES

Patient safety is at the heart of the paper technologies developed to pack sterile medical devices. Sterile medical devices come in many different forms, shapes and weight but they still must be sterilised, kept sterile over time, protected and in perfect condition for as aseptic usage by healthcare professionals. This brings many challenges to the paper which must be both robust and flexible, breathable to allow sterilisation processes and resistant to moist. It must seal to plastic films and be opened without releasing particules or fibres so that no residue can put the patient's health at risk.



STERIMED
INFECTION CONTROL

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HEALTH & PHARMACEUTICAL APPLICATIONS

BIOACTIVE COMPOUNDS FROM EUCALYPTUS LEAVES AND RESIDUAL BIOMASS

Eucalyptus globulus is highly rich in bioactive compounds such as essential oils, triterpenics and phenolics. The extraction of essential oils from eucalyptus leaves has been optimised and scaled up at the pilot facilities of RAIZ, the R&D Centre of The Navigator Company. The techno-economic feasibility of a potential industrial unit for the production of certified essential oils is under analysis. Eucalyptus essential oil has been successfully tested for its neuroprotective (including Alzheimer disease), antiaging, anticholesterolemic and anti-inflammatory activities, opening new potential uses in nutraceutics, fragrances and cosmetics. Triterpernics and phenolics may be sequentially extracted from leaves or from residual biomass (bark included). The bioactivity of these components has been tested, opening new perspectives for their industrial production and use.

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HEALTH & PHARMACEUTICAL APPLICATIONS

FIBDEX – THE WORLD'S FIRST WOOD-BASED NANOCELLULOSE WOUND CARE PRODUCT

FibDex® is the world's first wound dressing developed from wood-based nanocellulose with regulatory approval (CE mark) in Europe. It's a result of more than a decade of nanocellulose research at UPM and close collaboration with the public sector. The University of Helsinki's Biopharmaceutical Research Group started testing UPM's nanocellulose hydrogel in 2010, and the development of FibDex started in 2011. Based on clinical investigation, FibDex potentially meets all the requirements for an ideal wound dressing. The nanocellulose in FibDex efficiently retainins water, so FibDex keeps the wound bed suitably moist. FibDex is semi-breathable, which is important for wound healing. During the clinical investigation, FibDex was shown to work well: it promotes wound healing, facilitates low pain experience and produces significantly improved skin quality in terms of elasticity of epithelialised donor site. FibDex is a one-time application dressing that does not need to be changed during treatment: it comes off by itself when the wound heals. In addition to more comfortable treatment for the patient and favourable treatment results (scar quality), faster wound healing results in cost savings for the hospital and society. Clinical investigation is ongoing at the Burn Centre of Uppsala University Hospital, Sweden, with regard to using FibDex for superficial dermal burns.

UPM

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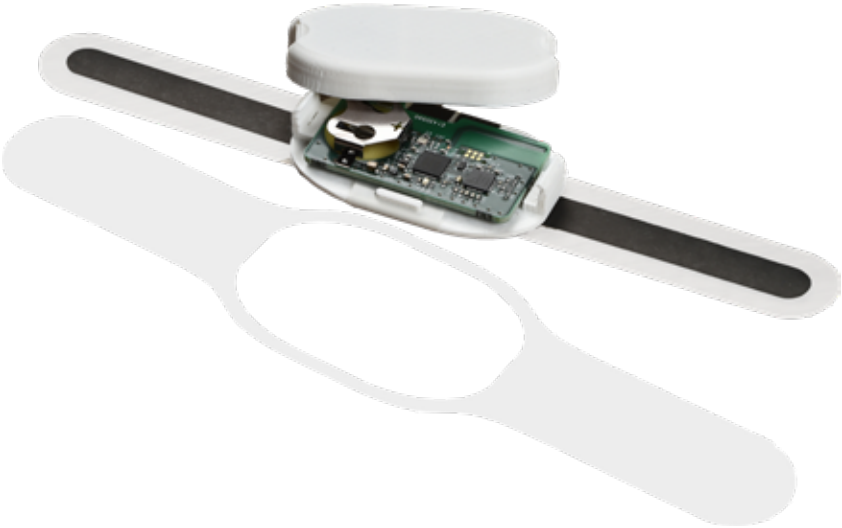
HEALTH & PHARMACEUTICAL APPLICATIONS

CELLULOSE-BASED PLATFORMS FOR FLEXIBLE ELECTRONICS

Healthcare remains one of the largest waste-producing sectors in the world. Plastics are heavily used in medical supplies and account for 25% of the waste generated by hospitals. 91% of plastics are not recycled and end up in landfills or nature. VTT Technical Research Centre of Finland has developed a new sustainable cellulose-based film that is free from fossil-fuel derived plastic materials, and an excellent platform for building flexible electronic devices especially targeting the medical sector. Our film solution offers high strength, flexibility, transparency, breathability and printability. Most importantly, the film is designed to be recycled and offers a path towards circularity for electronic materials such as precious metals and semiconductors.



VTT

VTT Technical Research Centre

Finland

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HEALTH & PHARMACEUTICAL APPLICATIONS

NANOFILTRATION DEVICES USED TO DEACTIVATE AIRBORNE-SPREAD PATHOGENS AND INCREASE THE POPULATION'S IMMUNITY

Nanofiltration devices are used to deactivate airborne-spread pathogens on nanofibrillated cellulose/nanocellulose-based surface-modified filter material and increase the population's immunity against diseases caused by these pathogens. The device was invented to inactive droplet-transmitted pathogens. Microdroplets are captured by filtering contaminated air on a filter material/paper with the nanofibrillated cellulose and/or nanocellulose surface treatment containing antiseptic metal ions and an adjuvant in the retained residual water. The air is taken in via the opening of the nanofiltration device located at the bottom and passes into the centre of the filter cartridge, where a germicidal emitter emits radiation in the UV-C range of the electromagnetic wavelength spectrum. Subsequently, it flows through a filter paper containing salts of antiseptic metals from the centre of the radiator outwards through a filter paper hermetically inserted into the filter cartridge, folded harmoniously so that its surface is maximally and entirely irradiated with UV-C radiation. Antiseptic ions diffuse into the contaminated microdroplets, which, with UV-C radiation, deactivate viruses and disinfect bacteria. The droplets dry out, and the deactivated viruses and bacteria are carried away by air, which, with the help of adjuvants, reach the human body and increase the population's immunity.

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HYGIENE & COSMETICS

PULP FROM WHEAT STRAW: A BREAK-THROUGH TOWARDS A MORE SUSTAINABLE SOCIETY

Traditional standard wood pulping processes generate lignosulfonate as a by-product. Accordingly, Essity's innovative new pulping process generates in addition to the pulp a lignin-containing byproduct. Essity is launching this by-product onto the market with the brand InnoLig+®. The feedstock for InnoLig+® is straw, an agricultural residual from the fields. The used wheat straw is a fast-growing annual plant that is locally sourced. Essity's innovative pulping process needs no sulfur. As a result, the produced InnoLig+® is sulfur-free in contrast to the lignosulfonate produced with the traditional wood pulpin.

InnoLig+® can be used in a variety of applications. Due to its properties, it can be used as dust suppressant, pellet binder, concrete plasticiser, fertiliser or as raw material for bio-based plastics.

Essity has invested MEUR 40 in a sustainable alternative fiber facility at our tissue manufacturing plant in Mannheim, Germany, that will enable us to produce high quality hygiene tissue products from wheat straw, a renewable resource that is an agricultural byproduct. This process is a circular innovation that will improve the overall environmental impact of our tissue products and is an important milestone on our journey to net zero in 2050.

In June 2022 Essity launched ZEWA® toilet paper with 10% straw. This will improve the environmental impact of the complete range of ZEWA® toilet paper. Consumers will not feel any difference: Zewa with straw is as strong and soft as the 'old' ZEWA® toilet paper made of woodbased fresh fibers. Since then Essity has launched several different ZEWA® toilet papers for the German, Austrian and Swiss market, as well as for its other European brands EDET® and LOTUS®.

essity

Essity

Sweden

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HYGIENE & COSMETICS

SUSTAINABLE PACKAGING IN FAVINI CRUSH CORN

Reuse of agro-food waste and quality raw materials are combined in Dcasadei's , I naturali' products. For the production of these cosmetics, the Florentine farm has selected raw materials from their land such as lavender, rosemary, saffron and amaranth. Their aim is to ennoble residues thanks to new alternative production methods and a short supply chain.

This objective is also reflected in the packaging with Crush Favini Corn paper, which recovers up to 15% of agro-industrial waste with the aim of reducing the virgin cellulose used in its production. The residues of the corncob are micronised and transformed into raw material for the production of ecological paper.

FAVINI

Favini Srl

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HYGIENE & COSMETICS

ECONATURAL: THE CIRCULAR PAPER + DISPENSER SYSTEM FROM BEVERAGE CARTONS

From 2010 the breakthrough project EcoNatural gives new life to all the components in beverage cartons, using the cellulose fibres they contain to produce Fiberpack®, from which it makes paper, while the aluminium and polyethylene are used to produce Al.Pe.®, the raw material from which it makes dispensers, now with a new patented design. In 2024 Lucart Professional continues the innovation path and presents EcoNatural FLOW, the new unique range of dispensers in the EcoNatural line, made from beverage cartons, featuring a new exclusive and patented design with sinuous and elegant lines. EcoNatural is the hygiene solution of the future, giving your customers the quality, and the planet the respect they deserve. This is a concrete example of how the beverage cartons we use every day can be recycled with a special process and transformed into a new resource.

LUCART PROFESSIONAL

Lucart

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HYGIENE & COSMETICS

SPRUCESUGAR FOR COSMETICS

Boreal Bioproducts

Boreal Bioproducts was founded in 2018 to extract green value from the forest side streams of conventional pulp and paper industry. The feedstock, sawdust comes from Finnish sawmills that use PEFC™ and FSC® certified Nordic wood. As the manufacturing process of Boreal Bioproducts bases on pressurized hot water extraction (PHWE), its carbon footprint remains low. The only solvent of the process being water also means that the ingredients can be obtained in their natural form and there is no chemical waste created. Thus, it can be truly stated that SpruceSugar™ has outstanding sustainability profile!

In 2021, Boreal Bioproducts established a strategic partnership with Metsä Spring, the corporate venture capital unit of Metsä Group (revenue EUR 6 billion). This partnership led to an erection of pilot scale biorefinery that is now helping cosmetic industry to take a leap towards eco-responsible beauty by providing SpruceSugar™ samples to test in hair care, skin care, and hair care formulations.

SpruceSugar™

SpruceSugar™ is a galactoglucomannan-rich Picea abies extract. It is available in two grades that differs in the lignin content: LW 5 %-w and LL 10–15 %-w. SpruceSugar™ is easily soluble in water and slightly anionic by nature. Due to the low molecular weight of the polysaccharides (< 7 000 g/mol), the viscosity of a solution stays low. As a co-surfactant and co-emulsifier, it creates synergies with other natural surfactants enabling higher bio-content in the formulations. It is cold processable and ideal for minimalistic formulations but can be use beyond that.

SpruceSugar™ is a remarkable illustration of the complexity of the nature. SpruceSugar™ is unique multifunctional biodegradable ingredient that can be utilised both due to its film-forming nature, or foaming tendency but also because of its biological activity or UV-absorbing capabilities. The choice is yours, here are some recipes to start your journey!

Metsä

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HYGIENE & COSMETICS

RENOVA BLACK LABEL

The Renova Black Label is a collection products in tissue paper category, of high-quality items, characterised by superior materials, elegant design and refined details. This a range of products consisting of toilet paper, napkins, kitchen rolls, pocket and facial tissues.

This range of products is aimed at customers who value exclusivity, and excellence in all aspects, colourful designs and new functional solutions through stylish and environmentally-happy products.

Renova Black Label is a iconographic range product, is a unique and stylish option for those who want to add an edgy and modern touch to their home decor.

It was the development of Renova Black Label, however, which really catapulted the Renova brand onto the international stage where today it exports to 70 countries worldwide.

Renova

Renova

Portugal

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HYGIENE & COSMETICS

VALIDA

Valida T is a naturally derived, biodegradable rheology modifier that enables customers to create eco-friendly cosmetic and homecare formulations. It has a huge potential to replace microplastics and synthetic polymers. In September 2023, the European Commission adopted the restriction on synthetic polymer microplastics intentionally added to consumer or professional use products of any kind under the EU chemical legislation REACH. The Restriction aims to address pollution caused by intentionally added microplastics. Valida T, as an innovative and biodegradable alternative, will have opportunities from cosmetics to homecare detergents applications, and contribute to Europe's sustainable transition.

Valida L can be used as a biodegradable binder to replace synthetic polymers in solid detergent sheet. Valida enables plastic-free detergent sheets which dissolves completely in hot or cold water. Detergent sheets offers a more-sustainable alternative to a frequently used household product, by cutting down on excess packaging and weight. This offers a safer choice for the environment and human health. They represent a significant step forward in reducing the ecological footprint of household cleaning products.

sappi

Sappi
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HYGIENE & COSMETICS

INNOVATIVE, FUNCTIONAL AND SUSTAINABLE TISSUE PRODUCTS

A new family of Innovative, functional and sustainable tissue products has been developed in the last 3 years by The Navigator Company. These include, among other, products produced with less chemicals (unbleached fibre), with higher smoothness or absorption capacity, encapsulated perfumed products, tissue containing soap, or tissue products for higher food fat absorption in culinary applications. All these products are nowadays produced at an industrial scale.

THE NAVIGATOR COMPANY

The Navigator Company

Portugal

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HYGIENE & COSMETICS

LUMENE JAR

Finnish beauty brand LUMENE is the first to launch a bio-attributed(* packaging application with both the jar and label made with UPM BioVerno™ naphtha.

This pioneering cooperation with UPM Raflatac and UPM Biofuels reduce LUMENE's need for fossil-based plastics by over 60 tonnes per year while also reducing the packaging's carbon footprint significantly by 1,5 million jars annually. The label material is UPM Raflatac Forest Film™*) based on mass-balance approach.

UPM

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HYGIENE & COSMETICS

TOILET PAPER MACH M!T PURE FROM RECYCLED CARDBOARD - 3 LAYERS / 8 ROLLS / 150 SHEETS

mach m!t PURE: The intelligent combination of innovation and fibre creates a sustainable tissue paper. mach m!t PURE is made from recycled cardboard, which conserves valuable resources. The paper fibres for mach m!t are only used after several recycling cycles. By using recycled cardboard as a sustainable raw material, the fibre has a 70% lower ecological footprint* than virgin fibres. mach m!t PURE toilet paper is also at least as soft as cellulose paper.

*The ecological scarcity method is used to calculate the ecological footprint. This method is based on the ISO 14040 standard and takes into account a wide range of environmental impacts, such as pollutant emissions, resource consumption and biodiversity losses associated with land use for the production of fibres (cradle-to-gate). These aspects are summarised in a key figure.

mach m!t

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INDUSTRY 4.0

METSÄ GROUP'S VIRTUAL FOREST

Metsä Group's Virtual Forest is a digital twin of real forest and service can be provided to all forest owners in Finland. Virtual Forest combines several data sources to create a fully immersive 3D environment of the forest owner's property. The service utilises the latest technology to visualise forest management methods for forest owners. Integrating the immersive experience in business operations and customer experience creates a strong foundation for future service development.

Metsä

Metsä Group

Finland

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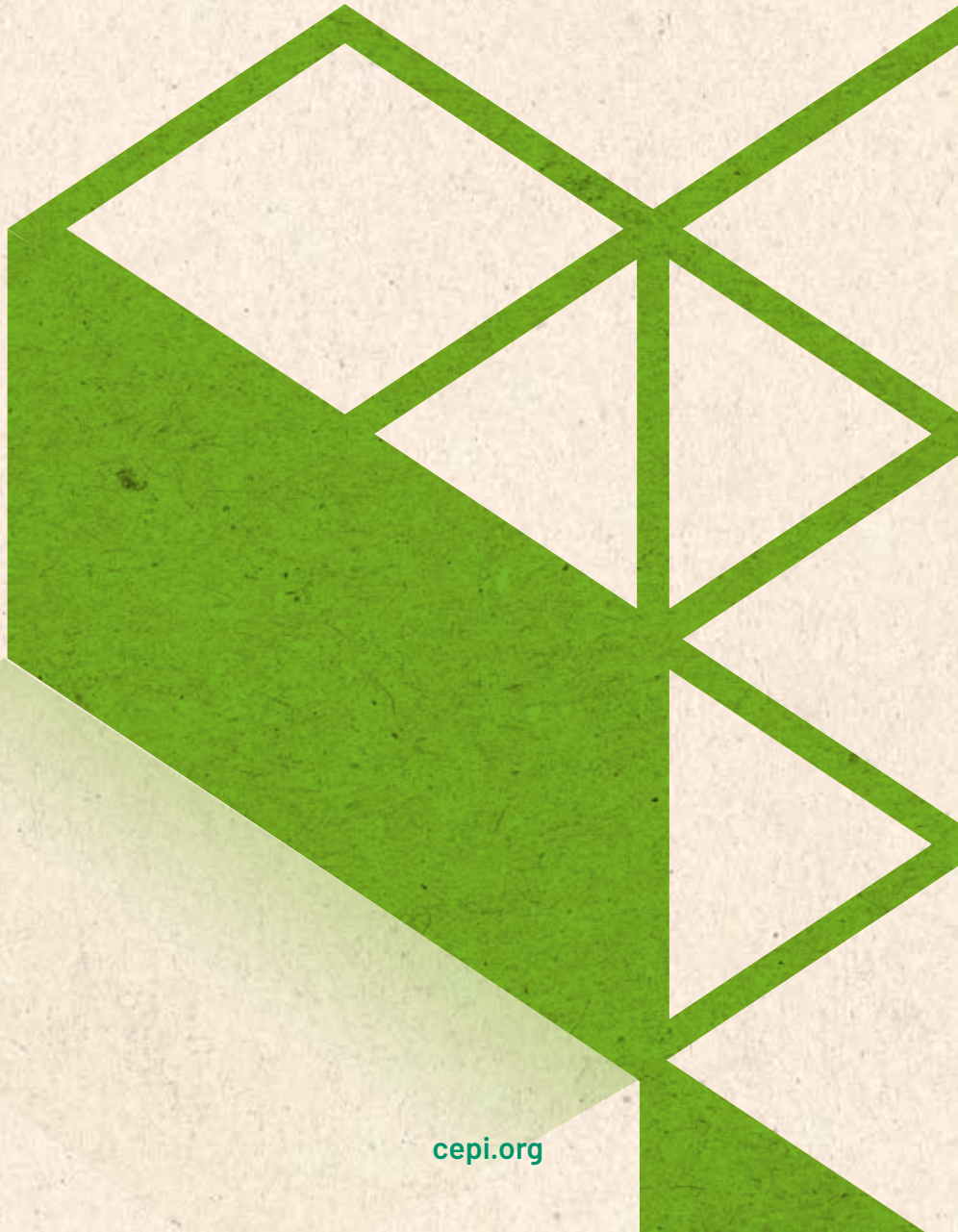

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