



Enterprise Europe Network

Partnering Opportunities Selected Catalogue on Bio-based Materials for Enterprise Europe Network (EEN) Clients November 2024

Jointly prepared by the members of EEN Thematic Group Sustainability -Sub -
Group Green Innovation



EEN Partnering Opportunities Database Focussed Catalogue 2024-Topics

- **Nature based Solutions** (solutions that protect, sustainably manage, or restore natural ecosystems)
- **Biological (bio) based solutions** (products are wholly or partly derived from materials of biological origin)
- Type of Profiles Selected for the Catalogue: **Technology Offer/ Technology Request & Business Offer/ Business Request**

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German company seeks production partner to produce sustainable peat alternative using new process

Summary (EEN POD Ref. [TODE20241030022](#))

A German company developed an innovative and sustainable method for soil and substrate production, along with its special humus product. It is set to lead the market in sustainable soil and substrate solutions. With peat bans in many EU- countries, the market potential is high. The patented process combines liquid manure from biogas and municipal foliage into the humus product, an odourless and eco-friendly peat alternative. A partner is sought to produce the humus product using the new process.

Advantages

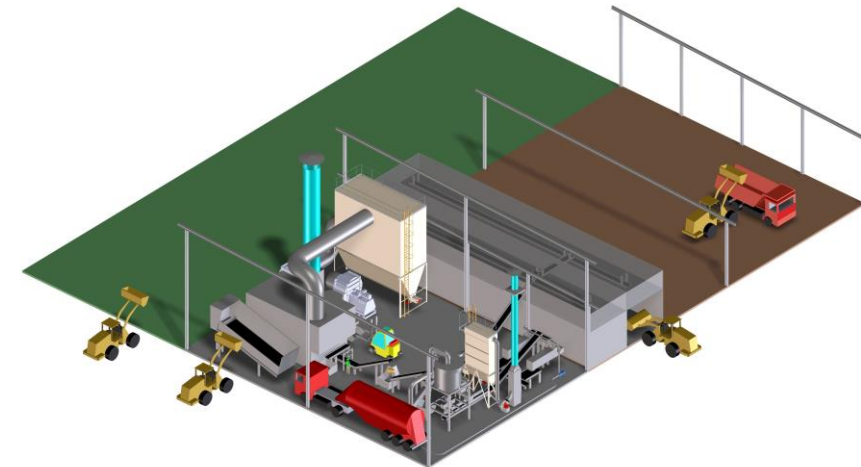
The nutrients, such as, nitrogen, phosphorus, potassium and others can be regulated. Plant nutrients from the manure give a decent fertilizing effect to the product. It is furthermore possible to reduce the synthetic fertilizers used in substrates and thus not only to conserve energy but also to align with global efforts to mitigate environmental impact.

Partners Sought

Partners from Industry, agriculture, horticulture for producing the special humus product using the newly developed process.

Technology Readiness Level Achieved: TRL9

EEN Contact: Sabrina Wodrich EEN North Rhine-Westphalia ZENIT GmbH–
sabrina.wodrich@zenit.eu



German SME offers sustainable alternative to conventional thermoformed films

Summary (EEN POD Ref. [TODE20240912022](#))

A German SME offers a bio-based and biologically degradable material suitable for thermoformed films that is food-contact approved and can be tailored to packaging tasks, e.g. blister packaging. The material is industrially compostable, heat-resistant and free from BPA and PFAS.

Advantages

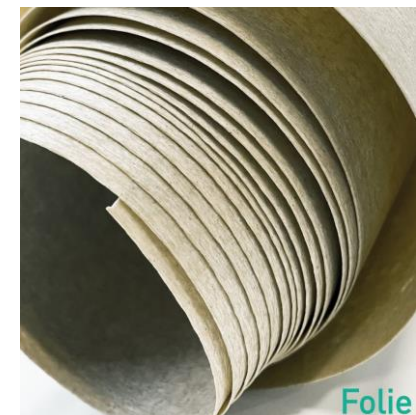
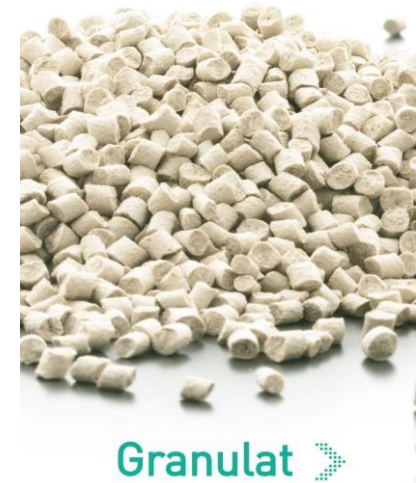
- Made from renewable raw materials (e.g. cellulose)
- 75% less greenhouse gases than a comparable PET variant
- Heat-resistant up to approx. 50 degree
- Available in granulate, film or finished thermoformed part

Partners Sought

The German SME would like to conclude commercial agreements with industrial partners interested in replacing conventional materials with the new product.

Technology Readiness Level Achieved: TRL9

EEN Contact: Sabrina Wodrich EEN North Rhine-Westphalia ZENIT GmbH–
sabrina.wodrich@zenit.eu



German Company offers Biobased coating for fibre-based packaging



Summary (EEN POD Ref. [TODE20241031006](#))

The company is a German based start-up working on bio-based, non-fossil barrier coatings for fibre-based packaging, aiming to reduce plastics. Their solution is based on natural materials, can be applied using common application methods and focusses recyclability of the fibres. They are a spin-off from a German food manufacturer and they already supply industry-scale quantities.

Advantages

- Natural materials with improved barrier performances compared to conventional coatings
- Tailor made solutions can be offered
- Products allow recyclability of coated fibre-based substrates
- Conventional application methods can be used
- Experience in food industry

Partners Sought

The German company seeks European industrial partners interested in adjusting and using the solutions in their processes and products. The solutions will be tailored to the partners requirements.

Technology Readiness Level Achieved: TRL9

EEN Contact: Sabrina Wodrich EEN North Rhine-Westphalia ZENIT GmbH– sabrina.wodrich@zenit.eu

High density fibreboard from agricultural residual fibres

Summary (EEN POD Ref. [TODE20240403007](#))

A German university has developed a flexible, high-density fiberboard made from annually renewable raw materials that can be produced using existing manufacturing processes. The fiberboard consists of 80 to 90 % straw, a natural fiber and residual material that is available worldwide.

Advantages

- The fiberboards can be made from wheat, corn, rice, oat, barley, or rye straw
- Low cost of the raw materials
- "particularly flame retardant" according to the German standard DIN 4102-B1
- eco-friendly thermoplastic elastomer is used as a binder; no harmful additives
- Slip-resistant and shock-absorbent
- Free forms for interior design and furniture

Partners Sought

For the market launch of this fiberboard, the university is looking for partners from industry, licensee and/or investors who can produce such a board.

Technology Readiness Level Achieved: TRL6/7

EEN Contact: Simon Horoz– horoz@innovationsagentur-rlp.de



Natural hydraulic lime-based products for restoring old buildings and for new green buildings

Summary (EEN POD Ref. [BOIT20240212021](#))

An Italian company specialized in the production of building materials (gypsum and derivatives, mortar...) offers a line of natural hydraulic lime-based products highly recommended for the construction of new green buildings and for the restoration of old buildings.

Advantages

- non-toxic
- high breathable
- durable
- natural antibacterial
- lower emission of CO₂ for its production and, once laid, capable of absorbing CO₂ from the atmosphere
- easier to recycle and reuse

Partners Sought

The company is looking for trustful and long-term partners such as commercial agents, distributors of building products, and construction companies.

Technology Readiness Level Achieved: Already on the market

EEN Contact: Viviana Maria Fili, EEN Italy – v.fili@sicindustria.eu

A Belgian SME specialized in manufacturing Innovative HEMP blocks is looking for new business partners



Summary (EEN POD Ref. [BOBE20230926008](#))

The Belgian company, which promotes sustainable construction through the development, production and marketing of hemp blocks, is looking for international partners to support the commercial expansion of its innovative technology.

Advantages

- Thermal regulation, naturally regulates the temperature due to its high inertia insulating
- Humidity regulation, as a water buffer and offer a constant and healthy indoor climate for the occupants.
- Acoustic Insulation, which helps to dampen the majority of sound waves
- Protection and fire resistance (class B-s1 d0), it can offer up to more than 2 hours of fire resistance
- A 100% natural solution: limestone and hemp that are sourced locally.
- Flexible design & Ease of implementation
- Wide choice of finishing : brick, roughcast, cladding



Partners Sought

- Commercial agreement with technical assistance is sought

Technology Readiness Level Achieved TRL 9 – Already on the market

EEN Wallonia Contact : Manon Guillaume – m.guillaume@awex.be



A Dutch innovative start-up is looking for textile and seaweed partners in Portugal, Belgium & Germany



Summary (EEN POD Ref. [BONL20240916008](#))

An innovative Dutch start-up has developed artisanal and circular textile dyes from seaweed for the last 10 years and makes a biodegradable industrial textile dye that can replace synthetic dyes for the B2B market. They developed a proof of concept that has been offered to the international textile industry and tested against industry standards. They seek textile and seaweed partners in Portugal, Belgium & Germany.

Advantages

- Reduce footprint
- Traceable dye
- Biobased and seaweed grow rapidly
- Large volumes possible
- No use of land or freshwater to grow
- Chemical & pesticide-free dye & Biodegradable

Partners Sought

The company wishes to establish a long-term collaboration under a commercial agreement, outsourcing agreement, supplier agreement, investment agreement or research and development cooperation agreement.

Technology Readiness Level Achieved TRL 9 – Already on the market

EEN Netherlands Contact : Remko Triezenberg – remko.triezenberg@rvo.nl



A Dutch start-up developing materials from waste keratin protein fibre looking for textile weaving mill



Summary (EEN POD Ref. [TONL20240903004](#))

An innovative Dutch start-up that develops materials from waste keratin protein fibers looking for a textile weaving mills interested in new technology. The company provides a high-performance alternative to synthetic or animal-derived fibers.

Advantages

- Hypoallergenic Material: Their materials are hypoallergenic, ensuring a safer and more comfortable experience for users with allergies or sensitivities.
- Antibacterial
- Plastic and Toxic-Free
- Thermal Protection: Their materials provide thermal insulation, regulating temperature and enhancing comfort in diverse environments. They even tested their parka prototype atop the Aconcagua (at an altitude of 6961 meters), where it kept its wearer warm in -30°C.
- Optimal Moisture Regulation



Partners Sought

The company seeks responsible producers - weaving mills that operate in accordance with the principles of sustainable development and care for the natural environment.

EEN Netherlands Contact : Remko Triezenberg – remko.triezenberg@rvo.nl

New biodegradable plastic with thermoplastic starch and compatibilizer



Summary (EEN POD Ref. [TOSK20240916004](#))

An Slovak scientific and research institution has developed a new biodegradable plastic with thermoplastic starch and compatibilizer and is looking for a licensee/ buyer. Established Slovak scientific and research institute deals with detailed research on the investigation of mixtures of various plastics with thermoplastic starch.

Advantages

- significant reduction of material costs for the production of foils due to the incorporation of thermoplastic starch into the biodegradable polymer material
- excellent mechanical properties, especially strength, as well as toughness, outperforming low density polyethylene with ultimate properties close to or better compared to polypropylene and high density polyethylene

Partners Sought

The preferred cooperation types are either commercial agreement or investment agreement.

Technology Readiness Level Achieved- TRL 7, demonstrator available

EEN Contact : Ivana Majernikova – majernikova@bic.sk

A Turkish start-up produces materials as alternatives to synthetic and genuine leather from industrial olive waste



Summary (EEN POD Ref. [TOTR20240712017](#))

A Turkish start-up, by utilizing industrial olive waste, has developed a groundbreaking material that competes seriously with both synthetic and genuine leather. With over 10 international patent applications, their material contains more than 50% bio-content. The company aims to increase this bio-content to over 90% within their patented material and is actively engaged in R&D efforts and international projects to achieve this goal.

Advantages

- Robust R&D Structure
- Flexible Production Capabilities
- Eco-friendly Material Source
- Extensive Customer Portfolio

Partners Sought

The company seeks to co-operate with businesses large and small. The type of co-operation will vary dependent on the different need for either just developing an application or bringing the know-how in-house. The company will upskill the partner's developer(s).

Technology Readiness Level Achieved- TRL 9, Already on the Market

EEN Contact : Suheyila Turkyilmaz – suheyila.turkyilmaz@sabanciuniv.edu

A French company develops ingredients extracted from algae



Summary (EEN POD Ref. [BOFR20240522017](#))

A pioneer of marine biotechnologies with over 30 years of experience, the French company cultivates, extracts and purifies active ingredients from algae. The SME is looking for partners to co develop its innovative products with application in the human health sector (Medical devices and pharmaceuticals).

Advantages

- Great diversity of microalgae, seaweeds and halophy plants
- Strain library : > 400 microalgae;
- Complete facilities from Upstream to Downstream procedures;
- Large-Sized photobioreactors and extraction/purification equipment;
- Strict Quality Insurance policy.

Partners Sought

The SME provides a portfolio of products available up to the point of clinical trials. The European partner, industrial, must be able to demonstrate the effects and characterise them in terms of human health. The project focuses on mutual product development and co management of the proceed to market phase then distribution and commercialization.

EEN Contact : **Nathalie Andre** – n.andre@occitanie.cci.fr

Sustainable extract from pine trees as adhesive or binders or skincare products



Summary (EEN POD Ref. [TOFR20240517027](#))

A French company specializing in the extraction of pine resin has developed a new method that respects the health of trees and forests. They offer quality and traceability of their raw materials. The company's laboratory specializes in the extraction of pine resin, from which a particular organic maritime pine essential oil and a specific quality of rosin with non-sensitive (hypoallergenic) molecules are obtained.

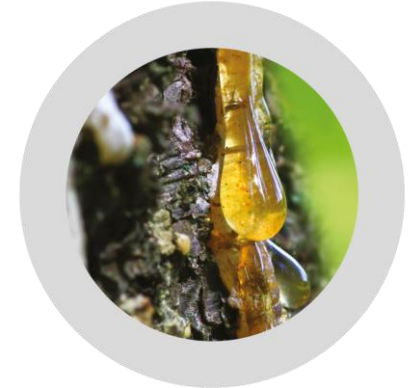
Advantages

- A 100% natural binder
- sustainable alternative to petroleum-based ingredients
- Resin of a much better quality level than currently available on the market
- Various certifications such as Organic Product European Regulation CE 834/2007, Food contact regulations: EU 10/2011, FDA 21 CFR, Cosmetic agreement CE 1223/2009

Partners Sought

The French company is looking for European partners to innovate, co-develop and collaborate with its know-how and its raw material: a non-oxidized organic rosin (= a specific quality of resin) to develop non sensitization skin products or new binders or adhesives.

EEN Contact : Laurent Volle— l.volle@bourgognefranche-comte.cci.fr



MykoFoam, utilizes fungi network technologies to create fire-safe insulation made with cellulosic waste from the paper industry.

Summary (PoD Ref. [BRGB20230802020](#))

Mykor produces an acoustic and thermal insulation sheet that stands out for its carbon-negative attributes. This sheet is exclusively composed of renewable and bio-based materials sourced from industrial waste, demonstrating our unwavering commitment to sustainability. Their technology not only enhances water-proofing and stabilisation, ensuring extended durability, but also retains the sought-after breathable and fire-retardant advantages synonymous with mycelium insulation.

Advantages

- Mykor has a take-back policy welcoming all unused products from over ordering within the returns period.
- The aim is to be waste negative.
- Products are made of completely renewable resources and waste stream.

Partners Sought

Mykor is seeking paper and pulping manufacturers all over Europe who are looking to sell their waste biomass (specifically wood bark and knots).

Technology Readiness Level Achieved- 8

Contact: Tracey Usher Tracey.Usher@innovateukedge.ukri.org



UK company seeks AI & NLP collaboration for bio-based materials database



Summary (POD Ref. TRGB20231030024)

UK company is looking for AI and NLP collaboration with expertise in programming or design to improve a bio-based materials database by enhancing data processes and enabling efficient searches and material recommendations for product development.

Advantages

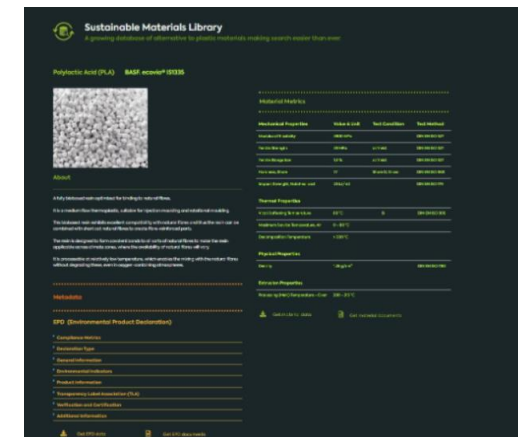
- ecosystemic, data-centric model unique.
- structured data approach can enable benchmarking, policy analysis, life cycle assessments, and more.
- data sources enable material tracing, licensing, insurance, and other functions to enable circular economy approach to bio-based materials

Additional Information+ Partners Sought

looking for partner(s) for tech development.

Technology Readiness Level Achieved : TRL 3 prototype tested currently and will be pilot stage TRL4 in Q2 2024.

EEN Contact : Monika Dunkel: monika.dunkel@innovateukedge.ukri.org



UK company seeks manufacturer for bio-based material food packaging

Summary (POD Ref. [TRGB20231030024](#))

A UK company has developed a new material made from biomass derived non-wood fibres, typically wheat straw pulp (can be 100% post harvest straw). This biodegradable and compostable material can be used to make strong disposable packaging products for the food processing sector and to pack fresh vegetables and fruits.

Advantages

- Biodegradable
- Compostable material packaging
- Tested for structural integrity in life cycle and shelf life that matches plastic alternatives
- Meets requirements of waterproofing

Additional Information+ Partners Sought

They are primarily looking for a partner to manufacture the products under licence.

Technology Readiness Level Achieved : TRL 4- Lab Tested.

EEN Contact : Mireille Owen Hughes: mireille.owenhughes@innovateukedge.ukri.org



Climate-neutral, socially responsible plant-or mushroom-based leather alternatives sought

Summary (POD Ref. [TRCH20240910002](#))

A Swiss organisation is looking for leather alternatives produced from non-food/consumable products either plant- or mushroom-based or from other non-animal derived materials. The sought material should be climate-neutral and socially responsible as well as produced in Europe to be part of the products portfolio of a new e-commerce platform. The quality should be comparable to traditional leather and suitable for various applications in the leather industry.

Expertise sought

- Knowledge in producing high-quality, durable alternatives to traditional leather , including both plant-based and other non-animal-based materials suitable for various applications across fashion, accessories, office supplies, travel goods, home furnishings, and sporting goods
- Familiarity with the European manufacturing sector and its sustainability practices

Additional Information & Partners

Organisations - companies, research centers - able to provide leather alternative materials at scale to complete the products portfolio of the e-commerce platform (B2C) developed by the Swiss NGO.

Technology Readiness Level Achieved : at least available for demonstration

EEN Contact : Inès Rossetti ines.rossetti@innosuisse.ch



source:
<https://endlichfair.de/lederalternativen/veganes-leder/>

Biobased and biodegradable polymers tailored as a readily available replacement of conventional plastic to reduce the carbon footprint

Summary (POD Ref. TOCH20240717008)

A Swiss cleantech start-up offers the development and production of biobased and biodegradable polymers for outdoor, fashion, sport, automotive and other plastic applications based on food side-stream bio-fillers. Material granules are elastic. The properties can be tuned through composition changes to tackle the microplastic pollution issue due to the biodegradability. Commercial agreement with developers, producers, manufacturers of polymer products looking for sustainable materials is sought.

Advantages

- Knowledge significant reduction in the product carbon footprint (PCF), lowering it by about 41% compared to conventional materials
- Alternative materials with same properties as standard TPUs (Thermoplastic Polyurethane) and PUs (Polyurethane)
- A fully elastic bioplastic, which is a pioneering development
- Biopolymers that do not absorb too much water but can still decompose in industrial composting facilities, meeting EN 14995 standards (around 10% per month)

Partners Sought

Partners for the co-development of bioplastic products tailored to his specifications: Developers, producers, manufacturers of polymer parts/products for fashion, outdoor equipment, tools, toys, sport, automotive and other plastic applications looking for an alternative to standard plastics materials.

Technology Readiness Level Achieved : available for demonstration

EEN Contact : Inès Rossetti ines.rossetti@innosuisse.ch



Salt reduction ingredient extracted from aromatic plants and spices



Summary (POD Ref. [TOPT20240916010](#))

A Portuguese SME has developed a salt reduction ingredient extracted from aromatic plants and spices, which is then encapsulated and spray-dried, offering a finished product in powder form that can be used to directly replace salt in a manufacturing process. Tests have indicated reduction of sodium content from 30% to 50% depending on the application in various foods, whilst contributing to improve aroma, taste and natural preservation.

Advantages

- Natural ingredients
- retaining maximum aroma,
- microbiological stability improving shelf-life and plant characteristics.

Partners Sought

The SME is looking for following partners:

- a) R&D partners of any size or sphere that can contribute to the development of a product range. Or
 - b) Commercial partners that are interested in exploring the possibility of selling the product. Or c)
- Investment: R&D capital

Technology Readiness Level Achieved : available for demonstration.

EEN Portugal Contact : Justina Catarino, justina.catarino@Ineg.pt