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Edito

Expanding the Textile Horizon: The Techtera 2024 International Development Plan

In order to actively support companies in the textile sector with their expansion abroad, Techtera submitted its 2024 International Development Plan to the Auvergne-Rhône-Alpes Region last October. This plan aims to promote and enhance the regional textile sector on a worldwide scale by offering financial support to eligible companies.

For the year 2024, Techtera is proposing several strategic actions to support companies in the textile sector internationally:

- **A presence at major trade shows dedicated to technical textiles**
- **International missions to Asia and Oceania:**
Techtera plans to participate in two exploratory missions in countries that have been identified as strategic by Techtera and its ecosystem: Japan and Australia.
- **A mission to discover European textile laboratories and technical centres:**
The aim is to provide regional companies in the textile sector with the opportunity to explore possibilities for collaboration with famous research centres; to stay informed of the latest technological advances; and to build relationships, in order to promote cooperation within Europe.
- **Monitoring technology throughout the year:**
An in-depth monitoring action will be carried out on Techtexil 2024 and also at major events in the sector; such as Ecomondo, an international trade show specialising in innovative technologies, services and industrial solutions linked to the green economy and the circular economy.

In 2024, the cluster will continue its development on a European scale by focusing on establishing key partnerships, setting up European projects and supporting its members.

Focus

MC4 – Mid-project review for the development of four composite recycling processes

Techtera has been a partner of the MC4 project, funded by the European Union, since April 2022. After 18 months of implementation, it is time for a mid-term review of this project, which has sixteen partners coming from nine European countries. The aim is to develop recycling methods suitable for composites reinforced with carbon or glass fibres.

Funded by the European Union, the Multi-level Circular Process Chain for Carbon and Glass Fibre Composites (MC4) project gathers a consortium of 16 partners from 8 European countries, with Profactor as the coordinating entity. This 3-year project began in April 2022 with a budget of 7M€.

MC4: Context and objectives

Composite materials are widely used in various industrial applications due to their exceptional functionality and lightweight properties. However, there is a main challenge related to their end-of-life, with less than 2% of composites currently being recycled, while 98% end up in landfills or incineration facilities. This problem is exacerbated by a growing number of composite products nearing the end of their lifecycle, such as wind turbine blades, aircraft components, and automotive parts.

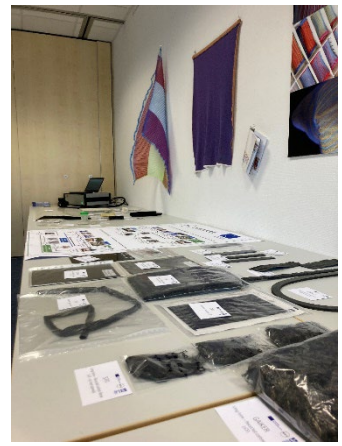
The primary objective of the MC4 project is to develop effective and economically viable recycling methods for composites made from thermoset materials, including both carbon and glass fibres. This initiative aims to support Europe's efforts to achieve resource independence and master processing technologies. The project focuses on four distinct paths, with two aiming for a rather rapid implementation within the industry, while the others promise more profound, long-term impacts, and require additional developments. Given the significant cost difference between glass and carbon fibres, separate strategies are being explored for these two classes of composites.

Mid-term assessment of MC4

On October 18th, the consortium met at the facilities of project partner STFI in Chemnitz, Germany, for the mid-term project review. This review involved a comprehensive evaluation of the progress achieved during the first half of the project, with the assessment of each advancement.

Main achievements at this 18-month milestone include the demonstration of several steps of the recycling processes at the laboratory scale, a showcase of sample products made by the partners, and the successful realization of the initial steps & designs for the planned pilot actions.

Specifically, regarding **the recycling of carbon fibre composites**, uncured carbon fibre has been successfully recycled using two different processes: scrap reshaping and BMC intermediate material manufacturing. For the long-term recycling approach, cured carbon fibre has also been successfully separated from the matrix at the laboratory scale through chemical recycling (solvolysis), enabling the recovery of recycled carbon fibres. Additionally, the recovered organic (non-fibre) fraction has been analyzed and successfully reused as a filler in CFRP (carbon fibre-reinforced polymer) to improve fibre-resin interactions. The construction of a recycling pilot plant's main reactor is scheduled to begin at the end of this year. In the textile domain, dry carbon fibre waste has been used to develop nonwoven materials at the laboratory scale, including airlay, carded, and then cross-lapped or stretched to tape, and first development for a semi-industrial scale quality control sensor have been investigated.



Regarding **the recycling of glass fibre composites (GFRP)**, shredded GFRP have been used to create new components by adding a foaming epoxy resin. For the long-term recycling process, innovative methods have been employed to create a novel epoxy vitrimer resin formulation to allow GFRP reshaping. Tests are currently done at a lab scale, and provide a favourable appearance after reshaping, with no apparent cracks or delamination.

In parallel, a process has been developed for infrared sorting using FTNIR identification, enabling the discrimination of epoxy-amine systems from epoxy-anhydride systems used in carbon fibre composites, a critical element for the solvolysis process and the reuse of the remaining non-fibrous fraction.

Additionally, Life Cycle Assessment (LCA) has been conducted for linear process chains to evaluate the potential environmental impacts of conventional composite manufacturing processes for the carbon and glass fibre-reinforced composites parts to be used as references. Results analysis highlighted that material is the life cycle stage with the most significant impact (70-90%) in all linear case studies.

Plans for the remaining 18 months of MC4

Next steps include the making of the pilot products using recycled materials across six distinct domains: automotive, boatbuilding, aerospace, sports equipment, civil engineering, and urban furniture, as well as standardization and skills development activities.

If you would like to learn more about MC4 and its progress, the project will, among other, be presented at the JEC exhibition from March 5 to 7, 2024, in Paris, and at Techtextil from April 23 to 26, 2024, in Frankfurt am Main.



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Our Services

Textile innovations and know-how highlighted at the A+A 2023 show

Techtera actively supports those working in the textile sector through participation at the main industrial trade shows. Techtera promotes businesses through an outreach stand as well as the deployment of targeted communication actions. These are carried out via dedicated publications on its social networks; a press kit highlighting the latest innovations; and a catalogue of exhibitors promoting textile know-how and skills.

Below you will discover the catalogue and press kit published by Techtera during the last A+A trade show. [Press kit - Catalogue](#)

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They are new members



LPPI - THE CHEMICAL PHYSICS LABORATORY FOR POLYMERS AND INTERFACES

Located within the University of Cergy (near Paris), the “LPPI” is a research entity dedicated to the study of polymers and interfaces. Its research activities encompass areas such as polymer synthesis, materials characterisation, study of thermodynamic and mechanical properties, as well as interactions with other materials. As a research entity, the LPPI actively collaborates with other laboratories, academic institutions, and industrial partners, thus strengthening its capacity to address complex problems and develop innovative solutions.

Currently, its approach is particularly focused on storing and converting energy; “stimulable” materials (*capable of being stimulated*); and more recently, the preservation and restoration of the material heritage.

Website: <https://lppi.cyu.fr/>



AKAMMAK

Founded in 2002 in Canada, and now based in Paris, Akammak develops thermo-regulating technical textiles. These innovative textiles improve thermal comfort, optimise performance and offer sustainable products.

The use of recycled fibres, or those of recyclable plant origin, is systematically applied when parameters and constraints allow it.

Thermoregulating textiles are used for the manufacture of outdoor clothing, work wear and military uniforms - providing protection in extreme conditions.

In the construction sector, thermoregulating textiles are used by operators looking for energy efficiency in buildings.

Akammak has therefore designed a textile, called Coldwinner®, which provides excellent thermal insulation while preserving comfort and breathability. It is ideal for cold environments and can be integrated into a wide range of clothing for different activities.

Website: <https://www.akammak.com/fr/>

Your appointments with the cluster

February 22, 2024 : Competitiveness workshop and micro-show: circularity in composites, textiles and wood (final event of the REC-N-COMP project) - FRANKFURT – GERMANY

Join us at the Circular Materials Center in Kortrijk on 22 February 2024 for the final event of the REC-N-COMP project on the recycling, reuse and circularity of composites, wood and textiles.

Discover circular business models, sustainable bonding technology and internationalisation opportunities.

Be inspired by innovative companies and develop your network at a half-day trade fair.

The event will include a dinner, and is open to any member company of one of the project partners, including Techtera.

[Inscription & programme](#)

Contact: Robin ODDON – roddon@techtera.org

April 23-26, 2024 : Techtexil trade show (Technical textile) - KORTRIJK BELGIUM

Techttextil is the worldwide event for the technical and nonwoven textiles sector. It will take place from April 23 to 26, 2024 in Frankfurt.

Every two years, the show attracts more than 1,500 exhibitors – 46 countries are represented.

During the last edition, Techtera accompanied 30 firms and thus represented the first French delegation to the show – 360 m². On average per participant, the firms made 64 qualified contacts. This first French delegation to the show, with 360 m², resulted in 87% participant satisfaction.

In partnership with Business France, Techtera will once again be present to support French companies in the sector and optimise their participation, thanks to:

- Market support prior to the show
- Participation in the French pavilion cocktail
- Organisational support

- Many targeted communication actions to highlight the know-how of the participants

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Life of the members



Eleven members involved in the Second Skin project

It's now official! The list of 26 candidates selected for the "Second Skin" Call for Expressions of Interest, of which Techtera is a partner, is now revealed! Among these candidates, eleven Techtera member organisations are part of

the adventure.

The Second Skin project is an innovative Way4Space project, based on the creation of an under-suit worn directly on the skin. It is designed to monitor the health of astronauts in real time and provide them with emergency care if necessary.

Website: [ici](#)



Recyc'Elit, raises funds amounting to €3.2 million

Recyc'Elit has raised €3.2 million in funds to implement the industrialisation phase of its polyester recycling technology. The company, based in Isère, has patented polyester recycling technology, particularly applied to textile fibres.

This technology represents a revolutionary process of chemical recycling by solvolysis, operating in mild conditions. This technique makes it possible to recycle previously untreated textile waste, intended for landfill or incineration. This major advance of Recyc'Elit lies in the ability to recycle polyester and co-materials such as elastane, nylon or cotton. Each component can thus be integrated into a circular recycling loop, contributing to the production of new textiles.

The funds raised will support Recyc'Elit in setting up a demonstrator capable of processing 100 tonnes of waste per year by 2025.

Website: <https://recyc-elit.com/>



A partnership signed between Clim8 and Chamatex to create the smart clothing of tomorrow

Last October, Clim8 and the Chamatex Group announced their collaboration aimed at designing revolutionary thermo-

regulating technology in the field of connected clothing. Clim8 is the specialist for intelligent thermal technologies; and Chamatex is a supplier of innovative textile solutions.

By capitalising on the expertise of clim8 concerning thermo-physiology, IoT and electronic textiles. The connected clothing solution that has been developed, goes beyond simple heating, by offering integrated automatic regulation. Toptex Cube, a subsidiary of the Chamatex Group, proposes innovative assembly systems mainly for technical clothing and luxury luggage – based on modern processes.

As part of this association, clim8 relies on the know-how of Toptex Cube for precision assembly between the heating panel and the electronic monitoring system. This collaboration allows clim8 to move from small-series production to large-scale industrialisation. Production is local thanks to Toptex Cube production sites. It thus benefits from advanced skills in modern assembly techniques. Moreover, Toptex Cube is expanding its skills in connected technologies and helping the deployment of these innovative projects.

Website: <https://myclim8.com/fr/> - <https://chamatex.net/>



Diatex strengthens its position in technical fabrics with the integration of Sasytex

Diatex announces its merger with Sasytex, the French specialist in the design and production of personalised technical textiles – and the French reference of the Cordura brand.

External growth, which is fully in line with the Diatex Group's desire to consolidate and diversify its offer in textiles for technical use, and continue its development.

Established in its market for more than 15 years, Sasytex provides a solid complement to the Diatex production processes. This makes it possible to integrate new expertise in the production of personalised technical textiles.

Diatex thus extends the scope of its activities linked to the defence and luggage sectors. It now offers an even wider range, which will allow it to meet the growing demands of its customers.

Website: <https://www.diatex.com/fr/>

Calls for projects

EUROPEAN AND INTERNATIONAL CALLS FOR PROJECTS

LIFE Programm - More information: [here](#)

Horizon Europe - More information: [here](#)

European Defence Fund - More information: [here](#)

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CART'TEX

Call for applications for the CART'TEX chart (reserved for TECHTERA members)

Textile companies wishing to join "CART'TEX", the chart of textile skills created by TECHTERA, can make themselves known to Issam CHAOUKI.

The CART'TEX database is the daily tool of the cluster for managing the search for partners for all projects, and for the response to business opportunities.

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Techtera is supported by:

