

The 2021 Innovation Challenge

Refashion and SoScience bring out 5 collaborative projects to enhance the recycling industrialization of the Textile Industry.

Every year Refashion organizes the Innovation Challenge, the call for projects to accelerate the Textile Industry's circular development and to involve experts and companies on the topic. For the 2021 edition Refashion teamed up with SoScience to bring to the fore new collaborative solutions tackling the challenges linked with the recycling industrialization of the industry. Five winners have been selected.

A call for projects to optimise textiles and footwear recycling and accelerate the circular development of the industry.

Better production, better consumption, better reuse, better recycling, such is Refashion's vision in order to develop a 100% circular textile industry. An ambition that matches the industry's challenges, particularly in terms of recycling as around 100,000 tonnes of post-consumer, non-reusable textiles and footwear need to be recycled every year. Since 2010, Refashion has been investing in and supporting innovative projects, as per its authority approval specifications, especially through the *Innovation Challenge*, with a minimum budget of €500,000 per year. The eco-organisation has therefore invested more than 5.5 million euros to co-finance 60 ambitious projects to optimize used non-reusable textiles and footwear recycling within the framework of the Innovation Challenge.

The aim of the Innovation Challenge is to provide solutions to the recycling challenges in order to build a 100% circular textile industry, therefore to:

- Find and scale up innovative industrial and commercial solutions that optimize textiles and footwear recycling,
- Speed up the development of a more circular industry in synergy with other sectors requiring recycled materials (construction industry, automobile industry, etc.).

A new format of call for proposals, in partnership with SoScience.

For the 2021 edition, the Innovation Challenge has been designed in a new format, in partnership with SoScience, the specialist in collaborative research and responsible innovation programs, to bring out new and collaborative solutions. SoScience has applied its 'The Future Of' methodology to create a dedicated program: [The Future of Textile and Footwear Recycling](#). The challenge for this 12th edition was: ***How to produce environmentally performing materials from post-consumer non-reusable textiles and footwear that fit the market's functional and economic needs?***

- The international call for proposals, open from October to December 2021, was circulated to 310 international experts.
- 110 companies from 25 countries have shown an interest.
- The 2021 Innovation Challenge Jury selected 34 proposals to participate in partner meetings days, the highlight of the "The Future Of" program.
- At the end of these two half days, 13 collaboratives projects emerged.
- The 2021 Innovation Challenge Jury selected 5 projects for funding support from Refashion.

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Press release
28 March 2022

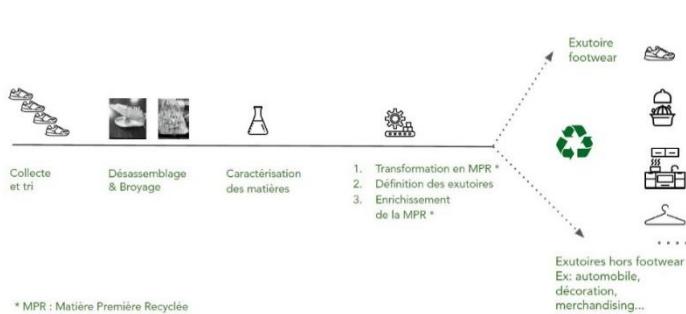
Refashion reveals the five winners of the 2021 Innovation Challenge - “The Future Of Textiles and Footwear Recycling”

TISSIUM INDUSTRY

Founded in 2015, Maximum designs and produces furniture made from industrial waste. Already winner in 2018, the company developed a rigid composite material, called TISSIUM, entirely made from waste (recycled textile fibres and a recycled thermosetting binder). In 2022, the Tissium company was created to **develop a 1,300m² industrial demonstrator** located in Ivry-sur-Seine, France. The aim is to produce TISSIUM in the form of machinable panels **for the furniture and furnishings markets**. Its partner, Gebetex, will provide a sustainable source of used non-reusable household textiles and a sorting process adapted to the project's requirements.



REVIVAL



Located in Northern France, the REVIVAL by impacte.capital company aims to become the first industrial footwear recycling platform in France. It partners with Bouyer Leroux, manufacturer of construction components searching for recycled materials as an alternative to petroleum-sourced materials. The REVIVAL project aims at **building a demonstrator using EVA (elastomeric polymer) derived from the recycling of sneakers' outsoles to make underlay for parquet flooring**.

MISTERY



The MISTERY (Multispectral Optical Sensors for TExtiles RecYcling), collaborative project, undertaken by the CEA YSPOT as part of the IRT Nanoelec, aims at prototyping the use of multispectral optical sensors in characterising used household textiles. The tests will be carried out under industrial conditions with support provided by Boer Group Recycling Solutions at the Gebetex sorting centre. The two other project partners are Aalto University, expert in the use of optical sensors for textile sorting, and Horiba Scientific, specialist in the production of analytical and measuring technologies.

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GREENCOSE

INDUO is a young Franco-British company specialised in textile innovation. INDUO has developed the GREENCOSE chemical recycling process, that enables cotton-based textiles to be recycled into a bi-component fibre for the clothing sector. Thanks to Refashion support, the GREENCOSE project accelerates its development by **testing this innovative process on cotton-rich used textiles feedstock**. Characterisation of suitable feedstock will directly be defined at the sorting centres, with the support from Gemtex, part of ENSAIT and the CETI.



AURAreFIL



Recyc'Elit is a young company that has developed a low-carbon plastic (PET) depolymerisation solution. It partners with the competitiveness cluster Techtera and with Grenoble Alpes Métropole. The AURAreFIL project aims to **adapt this chemical recycling process in order to transform used non-reusable polyester textiles (pure and blended) into recycled polyester threads** in the Auvergne Rhône-Alpes region. Techtera will coordinate this project aiming at creating a real production chain of high quality recycled polyester thread. Grenoble Alpes Métropole will supply the sorted textiles feedstock.

Press Contacts:

Jennifer CUENCA - 07 78 45 21 78 - jennifer.cuenca@becoming-group.com
Léa FRANCOIS - 06 16 40 10 58 - lea.francois@becoming-group.com