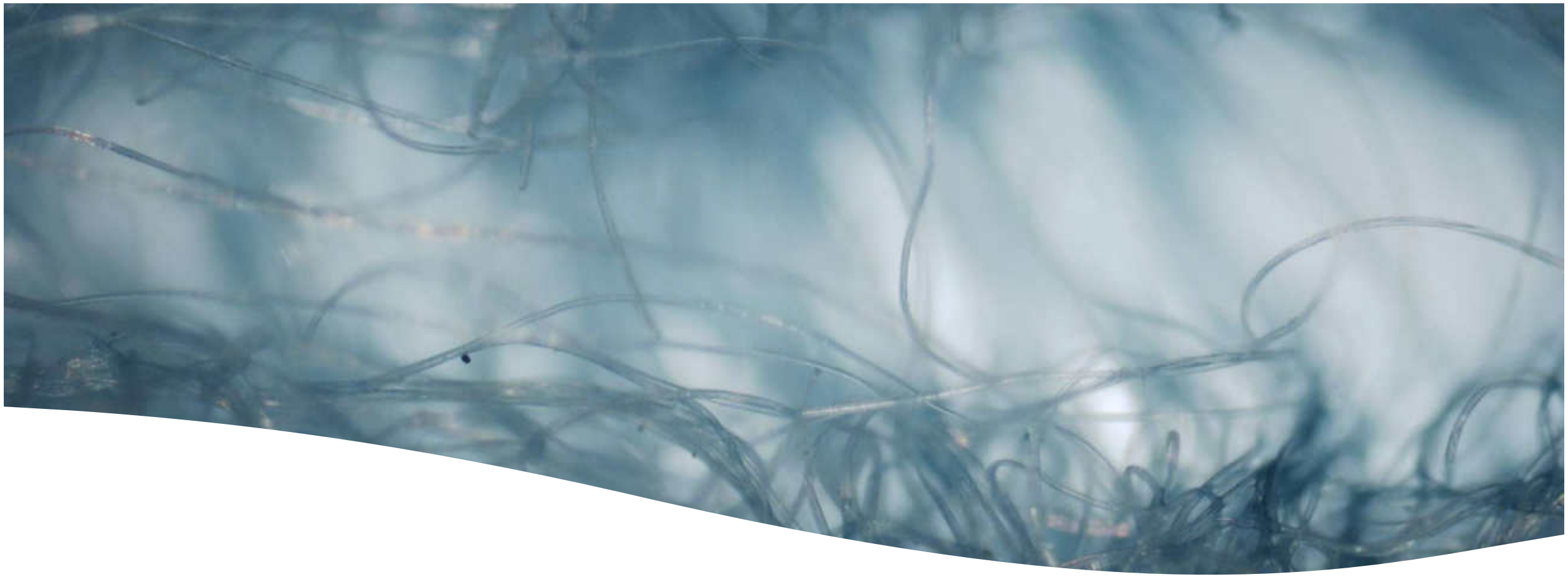


Centre of expertise

At the service of the textile and plastics converting industries

Collective Research Centre

- Membership organisation
- Governed by the industry
- In service of the industry
- Non profit

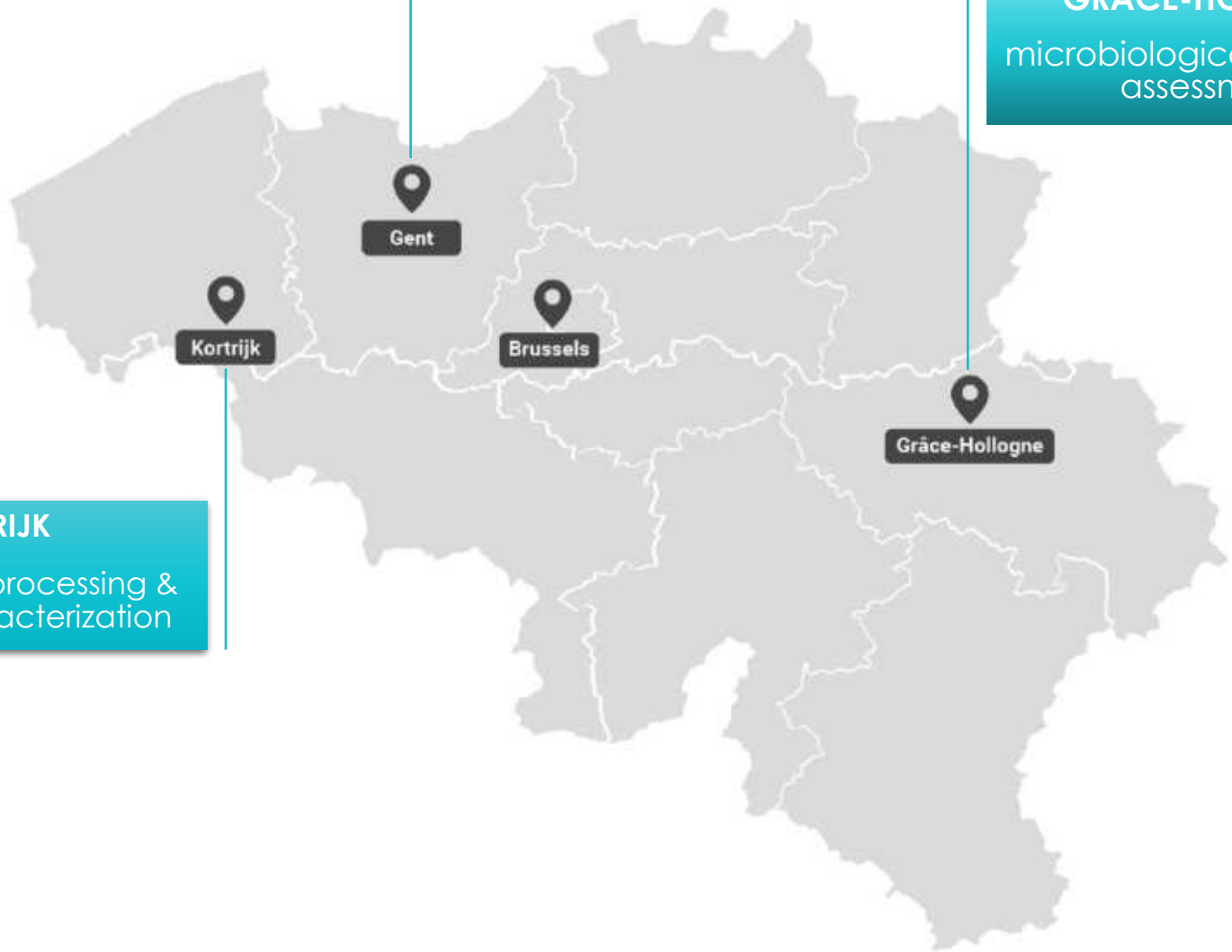
Labs & Offices

GENT-ZWIJNAARDE

chemical analyses, ST4Rlab, physical & burning behaviour testing

GRÂCE-HOLLOGNE

microbiological & comfort assessments

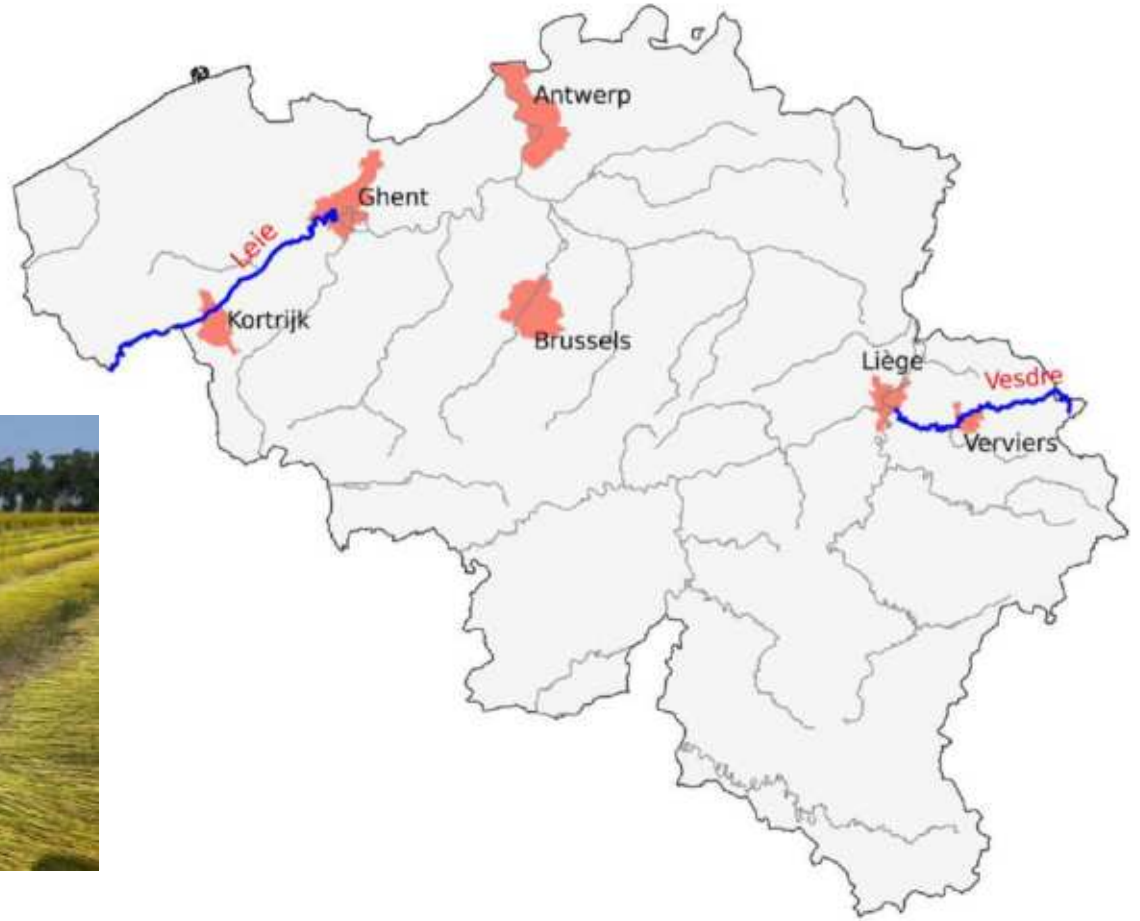


KORTRIJK

Plastics, melt processing & polymer characterization

Origins

Flax



Wool

Leie en Vesdre create exceptional conditions for flax and wool treatment

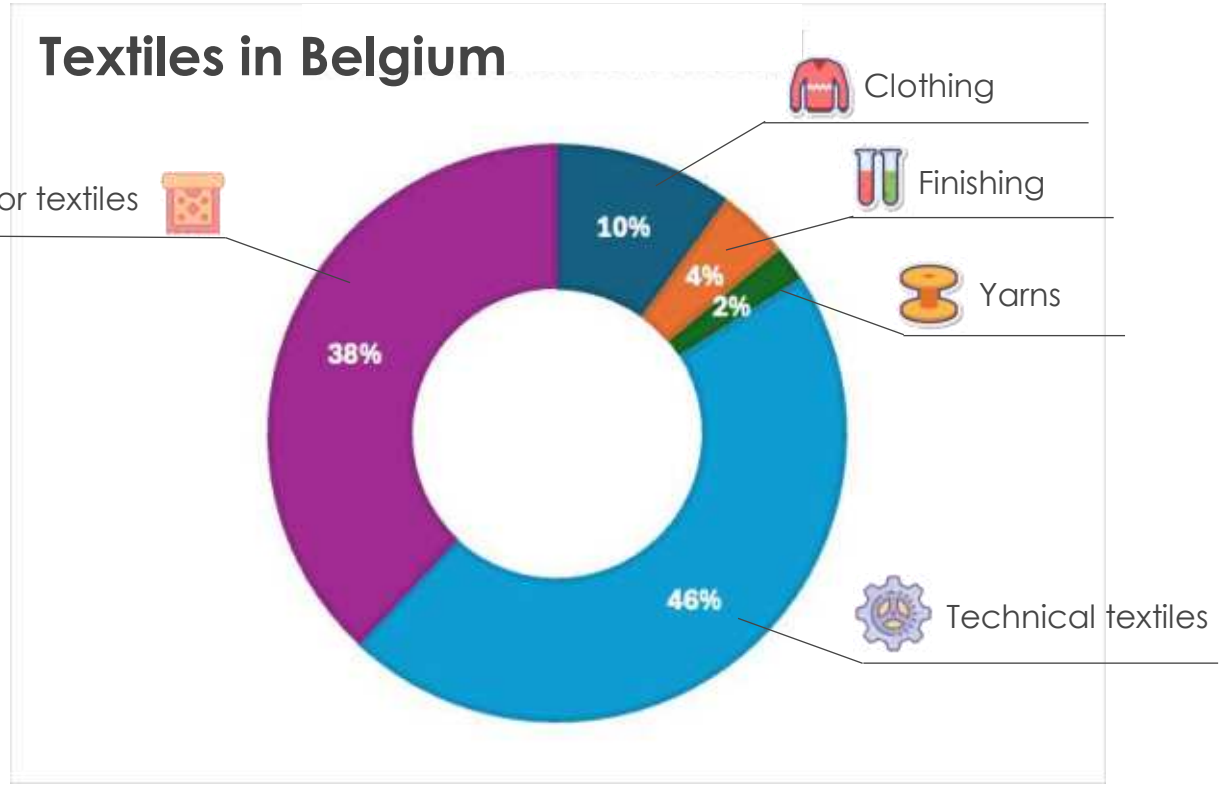
Brief History

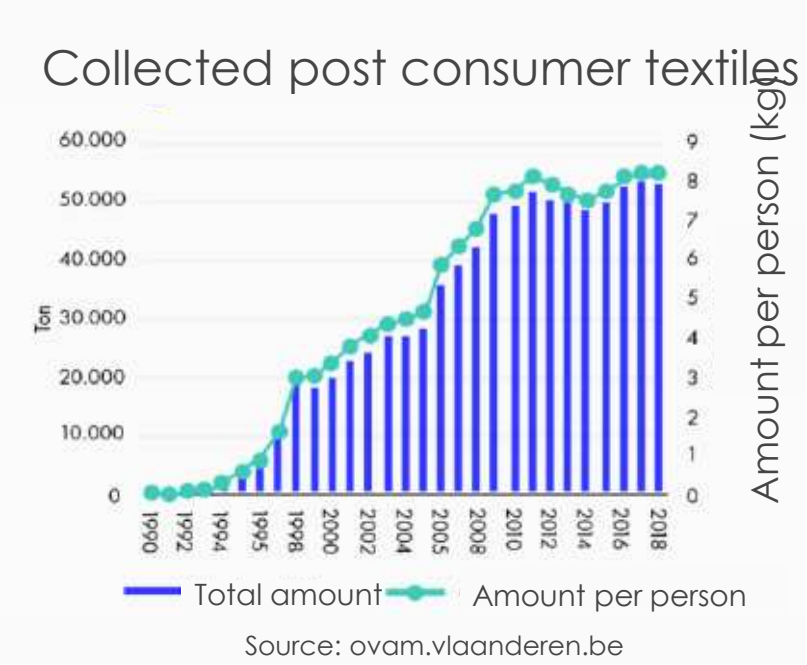
- Beginning:
  flax/linnen and wool

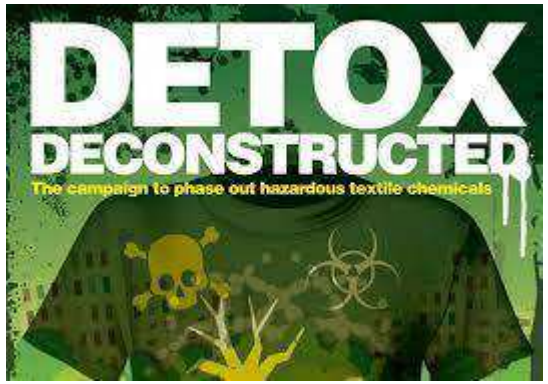
- 1950s & 60s:
  Reorientation to interior textiles,
  eg carpets → 'golden era'

- 21st century:
  gradual switch to 'technical textiles'

‘Today’







→ **Centexbel adapts and supports**

Activities

This is what we're doing

Research & Development

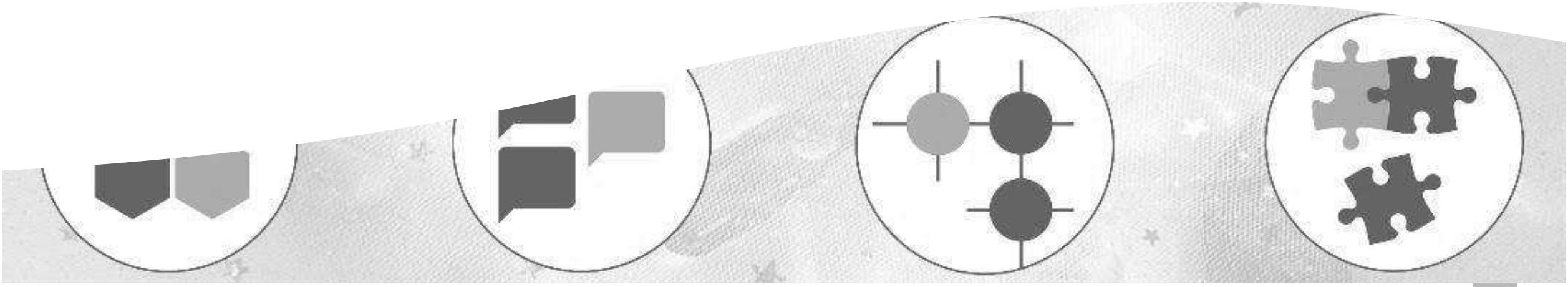
Testing

Platforms for open innovation

Consultancy & Services

Knowledge dissemination

Product certification



R&D

Research programs & themes

Research and Innovation strategy

Close to industry:

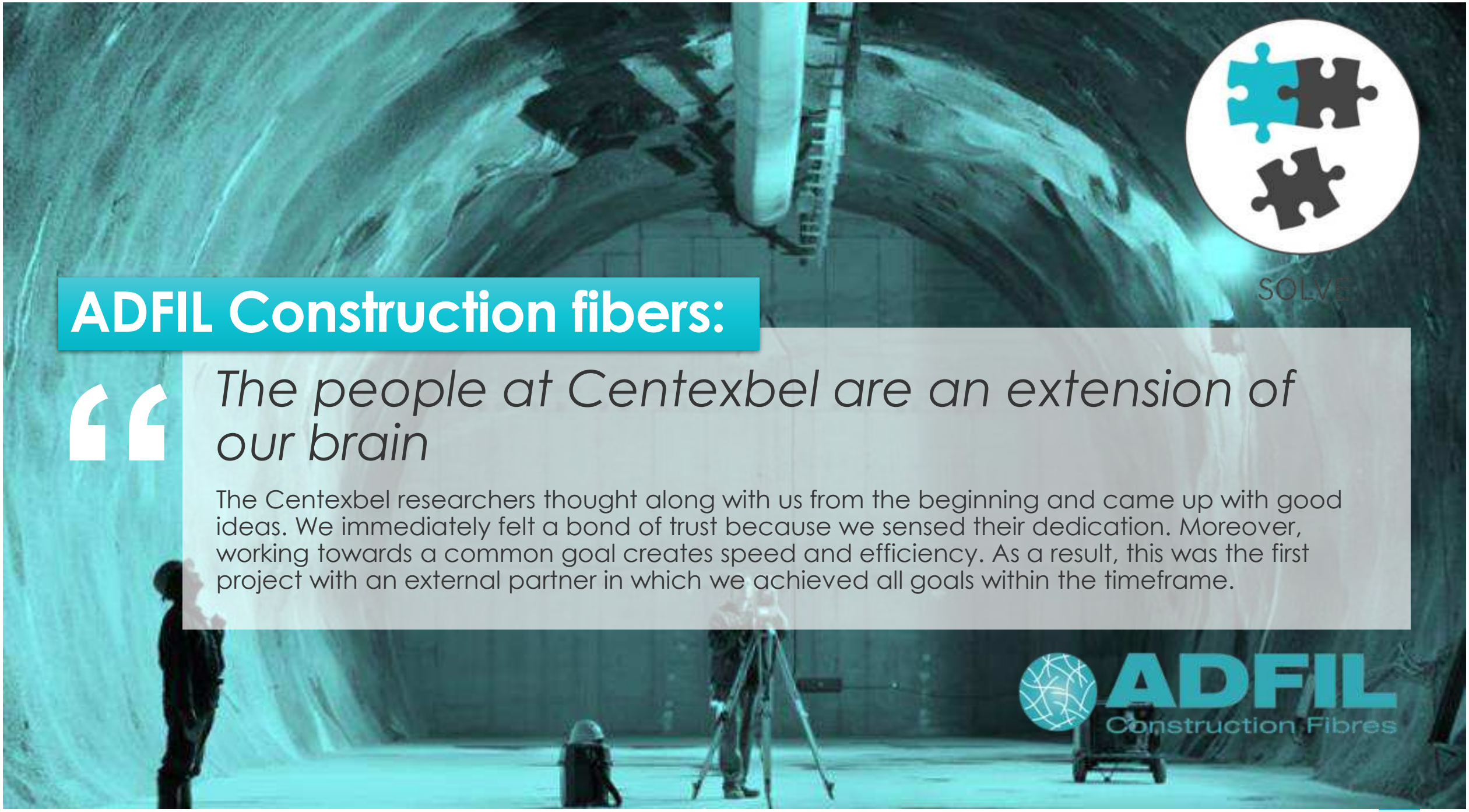
- Needs
- Opportunities

Sustainability:

- Resource efficiency
- Circular use of materials
- Biopolymers (industrial implementation)

European-oriented:

- Horizon Europe, Interreg, Cornet, Life, …

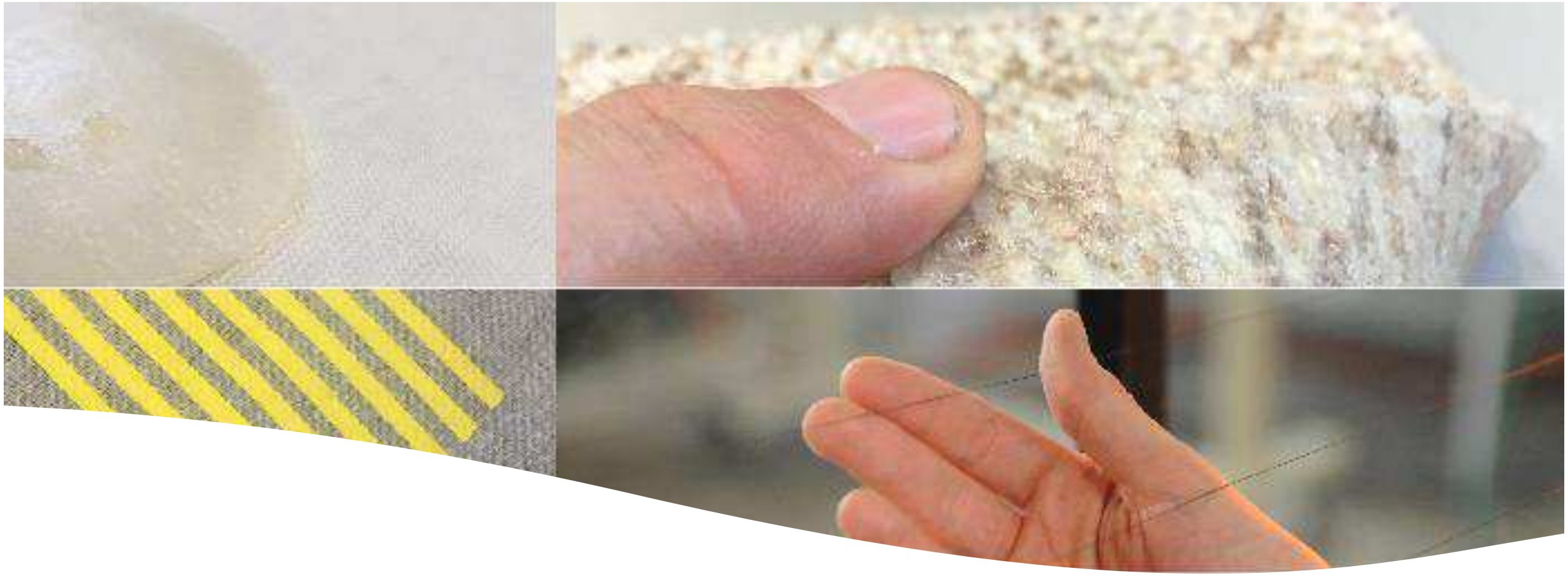


ADFIL Construction fibers:

“The people at Centexbel are an extension of our brain

The Centexbel researchers thought along with us from the beginning and came up with good ideas. We immediately felt a bond of trust because we sensed their dedication. Moreover, working towards a common goal creates speed and efficiency. As a result, this was the first project with an external partner in which we achieved all goals within the timeframe.

ADFIL
Construction Fibres



Bio-based products & additives

High-performance & fully bio-based & biodegradable textiles and plastics

Biobased inks & coatings

Centexbel brings 2 new solutions on the market using PLA & PHA for inks, coatings and adhesives.

1. Waterbased dispersion of PLA or PHA ~ hydrosol
   - Conventional application techniques
   - Designed for textile applications
   - BE & EU Patent granted
2. PHA-based plastisol
   - High-solid
   - Coatings, inks and adhesives for various applications & substrates: textile, paper, cardboard …
   - BE & EU Patent pending

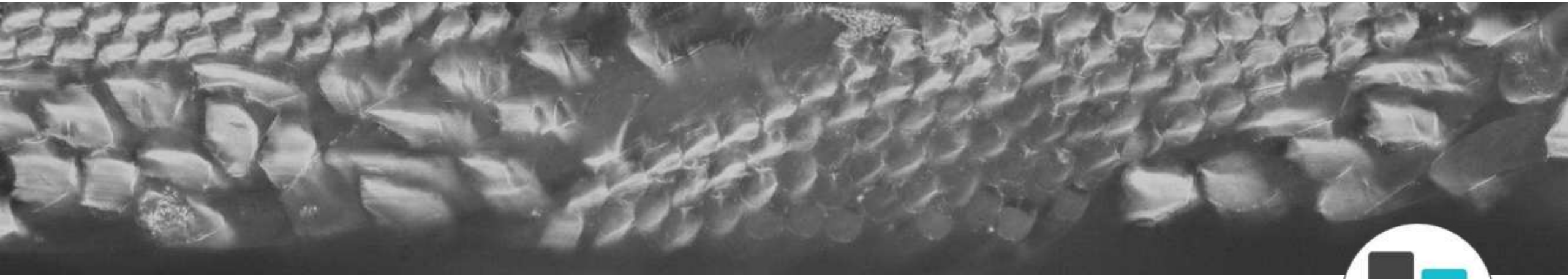
Towards a circular economy for textiles & plastics

Refuse | Rethink | Reduce | Reuse | Repair | Refurbish | Remanufacture | Repurpose | Recycle | Recover

Expertise on circularity & recycling

- Toolbox for circularisation

Sustainability



INSPIRE

Ecological processes & longevity of products

Reducing energy, chemical and water consumption, waste generation

Extending product life (durability)

Focus on R-strategies: Refuse – Rethink - Reduce – Reuse – Repair – Refurbish – Remanufacture – Repurpose – Recycle – Recover

New business models for Circular Economy

Smart textiles

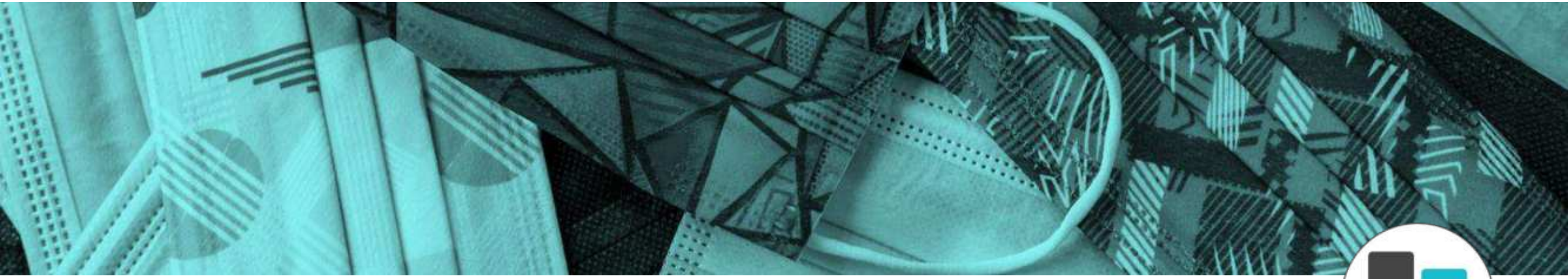
INSPIRE

For healthcare, sports, and many other applications

Flexible and washable electronics that can be worn close to the body/skin to remotely monitor vital and/or performance data of patients and athletes.

- Integration of sensors, actuators, power units, processors
- Smart textile structures
- Stretchable printed electronics
- Stimuli-sensitive materials
- Reliability testing
- 3D-printed protectors of electronic components

Safety, health & comfort



Protecting people and products

Thermophysical comfort of garments & gloves

Fire-safety, bacteriostatic properties, virus protection, anti-explosion

Humidity regulating

Implants, (smart) wound dressing and assistive products

VOC emissions

INSPIRE

European Oriented

CISUTAC
Circular and Sustainable Textiles and Clothing

Revolutionising Zipper Repair: A Modular and Semi-Automated Solution for Sustainable Fashion

PCH INNOVATIONS · DECATHLON · Kringwinkel · TEXAID · STAM

The textile industry is dealing with a major waste issue, both in terms of production infrastructure and consumption culture. Despite some efforts by key players to promote sustainable fashion by encouraging customers to extend the lifespan of their clothing, **there is no standardised infrastructure or systematic approach for repairing textile products at scale and a reasonable cost.**

CENTEXBEL · VKC

Herewear Hub

Gain skills and become part of a textile & clothing ecosystem that is bio-based, local and circular.

CENTEXBEL

BELAC
056-TEST

Testing

EN ISO/IEC 17025 accredited test laboratory

056-TEST

SOLVE

Several dedicated labs

- Physical & Mechanical tests
- Burning behaviour
- Comfort testing
- Microbiological assessment
- Chemical analysis

Microbiological assessments

SOLVE

Hygiene, barrier properties and health related aspects of textiles

Textiles have always played a major role in human hygiene. Textiles provide a **barrier** against all kinds of germs or serve as bandage or plaster… Modern surgery uses textile "stents" and "scaffolds" degradable or not by the human body.

The microbiological testing lab of Centexbel is fully equipped to assess antibacterial and antifungal properties of (treated) textiles.

The lab also performs tests on biological degradability, barrier properties against micro-organisms, particles, and the microbiological hygiene of **medical textiles and medical face masks.**

Chemical analyses

Composition & Properties

In chemical testing textile samples are analyzed by using chemicals and/or they are tested on their chemical properties and composition

REACH compliance

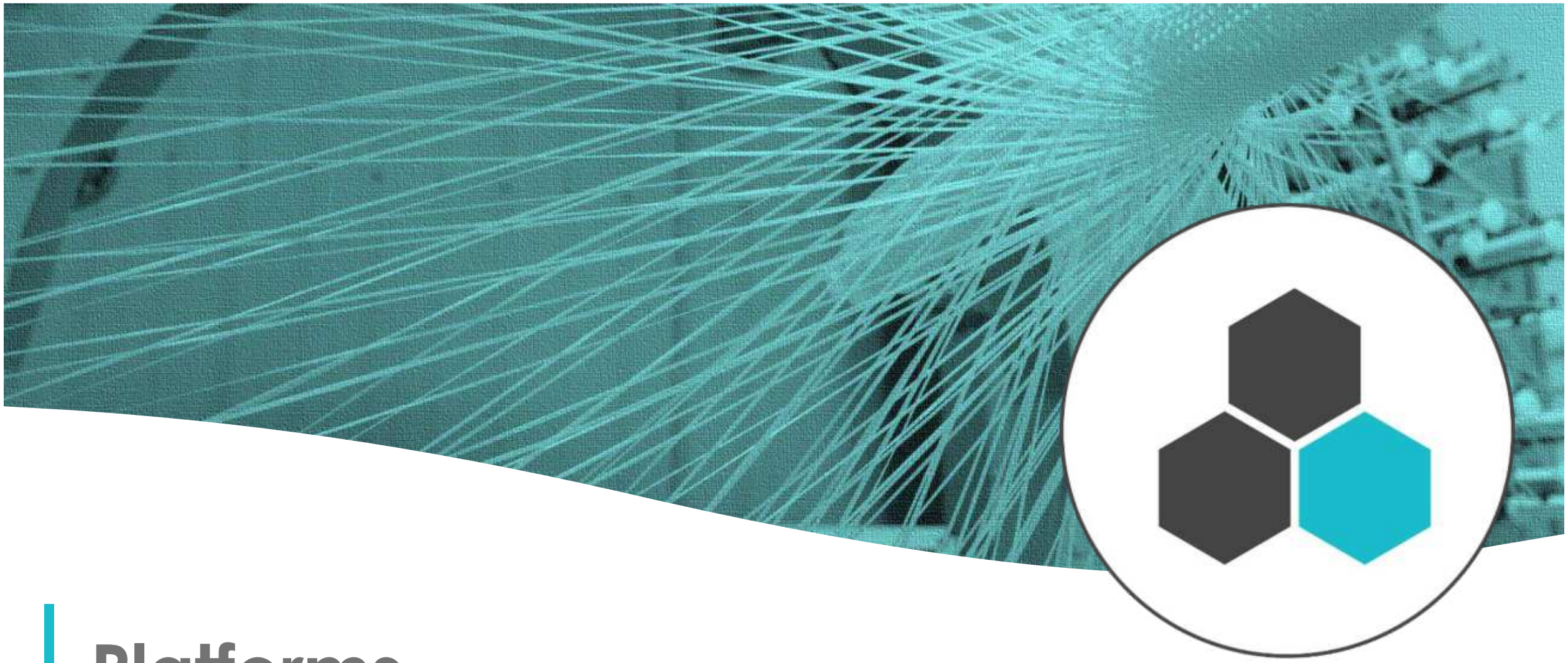
Compliance to REACH allows companies to:

- Prove they are safeguarding human health and the environment
- Access the EU market
- Avoid regulatory fines and litigation

EOL & recycling

"Hazardous chemicals were found in 78% of post-consumer cotton, 90% of post-consumer polyester and 100% of post-consumer wool samples."

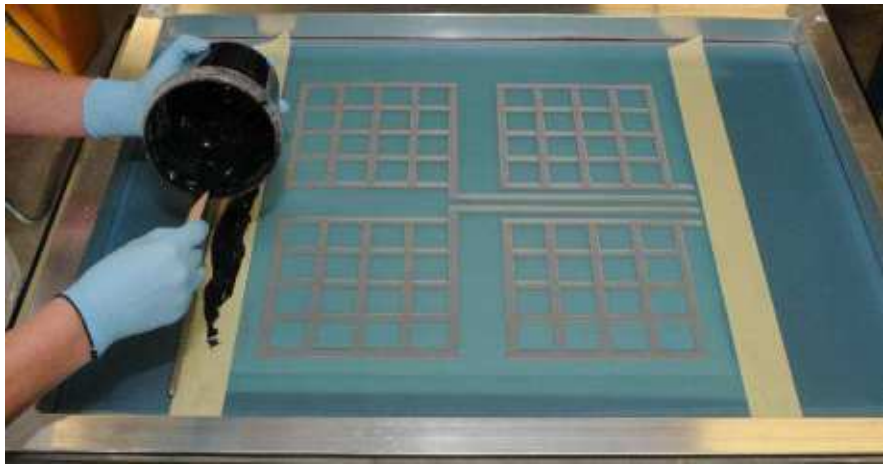
2017, H&M report

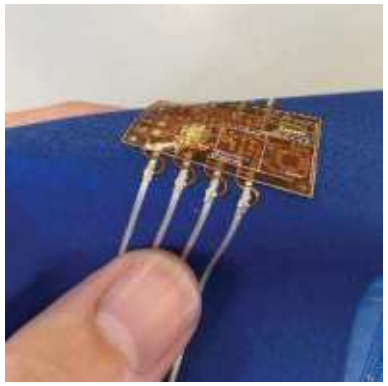


Platforms

open innovation, prototyping & product development

CREATE





CREATE

Textile coating & finishing

CENTEXBEL VKC

Melt processing

Yarn engineering

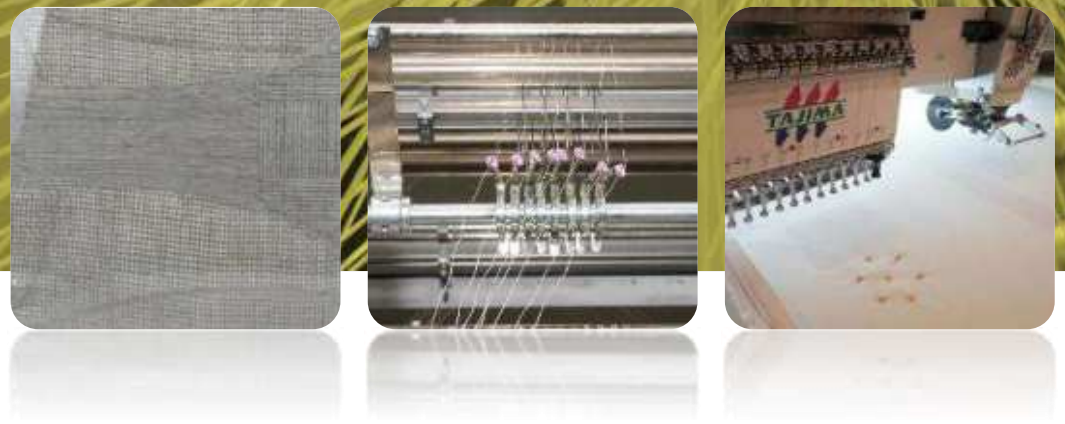
Additive manufacturing

3D printing platform

1. Markforged X7 for Continuous Fiber Reinforcement (CFR)
2. Fused Filament Fabrication (FFF) – Ultimaker S5
3. 3D Freeformer Technology

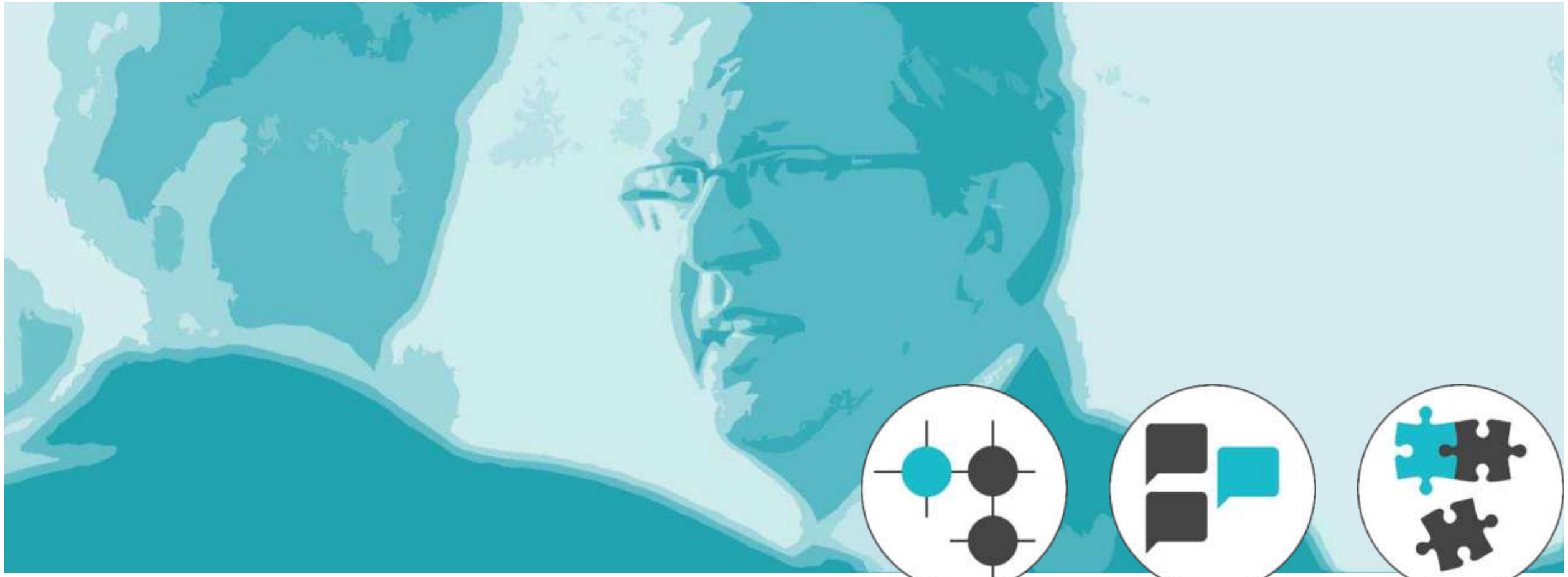
CREATE

Textile technology



Technical textiles & composites

- Fibre & textile reinforced composites for high-end applications
- Woven, knitted, braided, embroidered textile-based prepregs
- ***Braiding machine suited for various types of technical fibres (carbon, glass, metal,…) applied in composites.***



Consultancy & Services

Problem-solving & knowledge dissemination

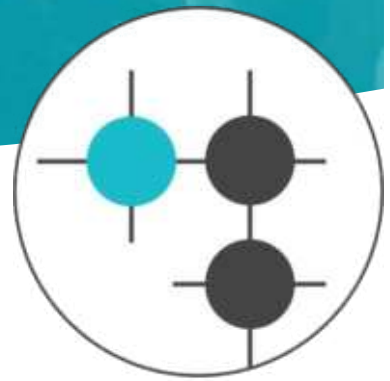
CENTEXBEL VKC

Covering various domains

- Hygiene & Medical Textiles
- Technical Textiles & Upholstery
- Floor & Wall coverings
- Yarn Engineering
- Circular Economy
- Environment & Toxicology
- Sustainable Products
- Eco-consultancy

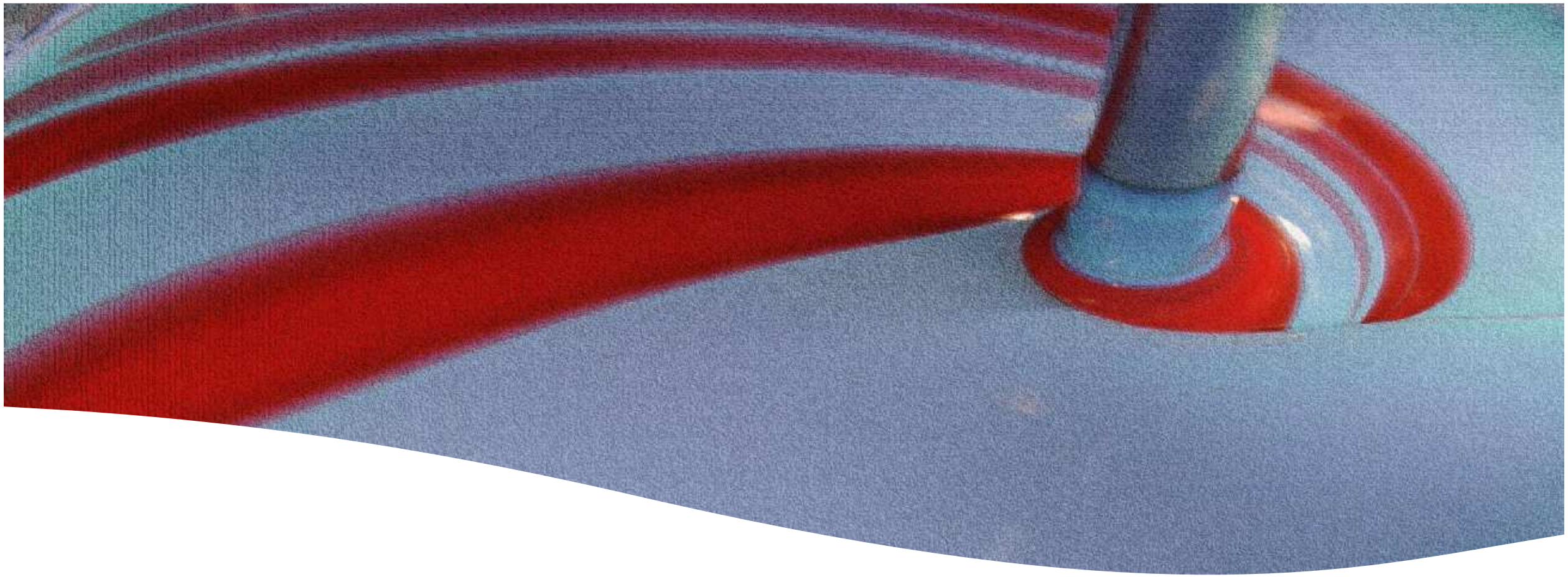
Knowledge dissemination

Conferences – Seminars – Workshops – Masterclasses –
Publications – Newsletters – Social Media – Websites



Acknowledgements

Our work is made possible thanks to the project support of the following financing authorities



More information

www.centexbel.be