Start of new Horizon Europe project BioFibreLoop – Circular biobased technical textiles with innovative bio-inspired non-toxic functionalisation

We are happy to announce the start of BioFibreLoop, an innovation action project funded by the European Union's Horizon Europe research and innovation programme with the aim to develop recyclable outdoor, active and workwear made from renewable bio-based materials with biomimetic functionalities to pave the way for circular and sustainable textile industry.

The textile industry is facing a decisive turning point in terms of sustainable production and rapid adaptation to consumer demand for smart functionalities. In order to produce functional textiles, chemicals are often used, which is problematic in terms of recycling processes and poses new challenges for the textile industry due to increasing regulations with strict bans on hazardous chemicals. Therefore, intelligent innovations are needed to shift the industry away from the usage of harmful chemicals and massive carbon footprint.

Faced with these bottlenecks, the industry must respond to several constraints:

- Use less water and avoid hazardous chemicals
- Reduce greenhouse gas emissions
- Increase usage of durable & recyclable bio-based materials
- Provide smart functionalities to address consumers' needs
- Digitalise their processes to become more efficient and close the loop towards circular economy

BioFibreLoop will revolutionize the functionalization of textiles with non-hazardous chemicals by reducing the use of hazardous chemicals by 100% while still meeting consumer needs for smart functionalities. By using laser technology, natural morphologies will be mimicked to achieve fabrics and garments with functions such as water and oil repellency, self-cleaning and antibacterial activity. The project will deliver affordable, resource and environmentally friendly, yet high-performance and durable textiles made of renewable sources like lignin, cellulose and polylactic acid for end markets. All processes aim to enable effective circularity and recycling up to near-zero waste biomimetic functionalisation and reducing greenhouse gas emissions by 20% by 2035.

The technology for functionalisation and recycling of bio-based materials will be developed at three industrial demonstrations in Austria, Czech Republic and Germany. At the end of the project a patented circular, sustainable and reliable process for the production of recyclable functional textiles will be validated and demonstrated on a large scale.

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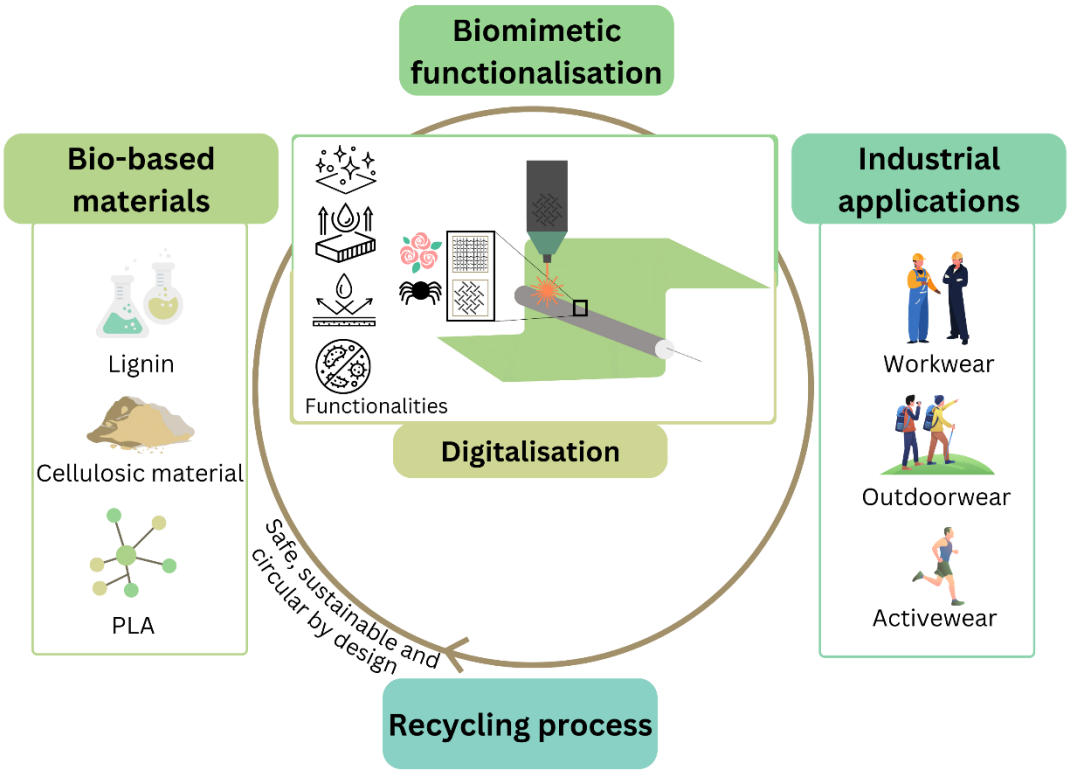

The BioFibreLoop consortium consists of 13 partners from 9 countries, combining multidisciplinary competencies and resources from academia, research, engineering, industries and universities:

1. Deutsche Institute für Textil- und Faserforschung (Coordinator) – Germany
2. Next Technology Tecnotessile Società nazionale di ricerca R. L. – Italy
3. Centre Technologique ALPhANOV – France
4. J.G. Knopf's Sohn GmbH & Co. KG – Germany
5. FreyZein Urban Outdoor GmbH – Austria
6. BEES - BE Engineers for Society – Italy
7. BAT Graphics Vernitech – France
8. Interuniversitair Micro-Electronica Centrum – Belgium
9. Idener Research & Development Agrupacion de Interes Economico – Spain
10. Teknologian tutkimuskeskus VTT Oy – Finland
11. Det Nationale Forskningscenter for Arbejdsmiljø – Denmark
12. Steinbeis Innovation gGmbH – Germany
13. NIL Textile SRO – Czech Republic

The project, with a duration of 42 months (starting on the 1st of June 2024) and a total budget of 7 million euros, will celebrate its kick-off meeting on the 26th to 27th of June in 2024 in Denkendorf, Germany.

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Project Details

Project No: 101130603

Start Date: 01/06/2024

Project Duration: 42 months

For additional information please contact the **Project Coordinator** at the **Deutsche Institute für Textil- und Faserforschung (DITF)**

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