

EUROPEAN UPWEARS PROJECT WORKSHOP 2 AT CITEVE MARKS A NEW STEP TOWARDS SUSTAINABLE AND BIOINSPIRED TEXTILES

CIRCULAR TEXTILES | BIO-INSPIRED DESIGN | ADVANCED
MANUFACTURING | DIGITAL TEXTILES | UPWEARS PROJECT

UPWEARS strengthens collaboration through hands-on innovation at CITEVE

An immersive workshop connecting research, technology and industrial practice

On 27 January 2026, the European project UPWEARS gathered its partners in Vila Nova de Famalicão (Portugal) for Workshop #2, hosted by CITEVE – Technological Centre for the Textile and Clothing Industries of Portugal.

Designed as a highly practical and interactive day, the workshop brought together researchers, engineers and technical experts to explore how bio-inspired design, circular processes and digital tools can concretely transform textile manufacturing.

This second technical workshop marked an important milestone in the project's journey, moving from conceptual discussions toward hands-on demonstrations and real production environments.



FROM BIO-INSPIRED CONCEPTS TO INDUSTRIAL REALITY

Throughout the day, participants engaged in a rich programme combining presentations and live demonstrations.

Key thematic sessions included:

- Bio-inspired design and additive manufacturing
- Recycling and sustainability strategies
- Digital tools for textile manufacturing

Experts from CITEVE shared insights into how advanced technologies can support the transition toward more circular and resource-efficient textile systems.



Beyond presentations, the workshop offered extensive live demonstrations, allowing participants to observe innovation directly within CITEVE's laboratories and pilot facilities.

Demonstrations covered:

- Additive manufacturing
- Mechanical recycling and spinning
- Chemical recycling
- Dyeing and finishing processes
- Nonwoven, woven and knitted structures
- Composite materials
- Cutting and sewing technologies

A guided laboratory visit further reinforced discussions, highlighting how research infrastructures accelerate the validation and scaling-up of sustainable textile solutions.

STRENGTHENING THE EUROPEAN TEXTILE VALUE CHAIN



By hosting the workshop directly within its technological facilities, CITEVE created a dynamic environment where:

- Scientific expertise met industrial application
- Materials innovation connected with processing technologies
- Sustainability objectives aligned with performance requirements

The event demonstrated how UPWEARS integrates the entire value chain, from bio-based raw materials to advanced textile manufacturing and digital optimisation tools.

This collaborative format fosters stronger synergies between work packages and supports the development of the project's flagship demonstrator: a bioinspired, high-performance and sustainable cross-country biking suit.

ACCELERATING THE TRANSITION TOWARDS CIRCULAR AND INTELLIGENT TEXTILES

UPWEARS aims to build an innovative and replicable value chain based on the valorisation of flax, hemp, cork and paper industry by-products, combining:

- Green chemistry processes
- Biomimetic design principles
- Functionalised fibres and yarns
- Embedded sensing technologies
- Artificial-intelligence-driven optimisation
- Circular design and recyclability strategies

Workshop #2 illustrated how these approaches are progressively converging into practical textile solutions.

By bringing partners into real manufacturing environments, the project reinforces its commitment to developing technologies that are not only innovative, but also scalable and industry-ready.



About UPWEARS

Duration: 48 months (September 2024 - August 2028)

Total budget: €7.8M

Horizon Europe contribution: €7M

14 partners from 7 European countries

Learn more: www.upwears.eu

Follow the project [on LinkedIn](#)

By valorising flax, hemp, cork and by-products of the paper industry, UPWEARS is building an innovative and replicable value chain for the production of bioinspired technical textiles.

The project integrates green chemistry, artificial-intelligence-driven automation, and biomimetic design to create multi-functional fabrics featuring functionalised fibres and yarns, embedded sensors, and pollution-sensing capabilities, while reducing waste and chemical use through enzymatic and eutectic green-solvent processes.

UPWEARS will demonstrate its innovations through a smart, protective and sustainable cross-country biking suit, designed to be abrasion-resistant, waterproof, stretchable, breathable and recyclable — an emblematic example of the next generation of European sportswear.

The project is coordinated by INRAE (France) and gathers 14 partners from 7 countries, covering the entire e-textile value chain, from fibre to functional prototype, including materials formulation, digital tools, sustainability assessments and stakeholder engagement:

University of Cambridge (UK), RISE (Sweden), CITEVE (Portugal), Bioeconomy Science Institute (New Zealand), KU Leuven (Belgium), Université Bretagne Sud (France), Université Marie et Louis Pasteur (France), Synchrotron SOLEIL (France) Linificio e Canapificio Nazionale (Italy), Texteis Penedo (Portugal), PAFIL (Portugal) and Bioeconomy For Change (France).

This project has received funding from the Horizon Europe programme under grant agreement No 101130741. Views and opinions expressed are however those of the authors only and do not necessarily reflect those of the European Union, the Horizon Europe or the HADEA. Neither the European Union nor the granting authority can be held responsible for them.



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