



AUTOloop

OUR MISSION

Turning Textile Waste into Valuable Resources

Europe generates over **1.24 million tonnes of non-rewearable textiles every year**, most of which are landfilled or incinerated. Today, less than 1% is recycled back into new textiles.

AUTOLOOP's mission is to **transform non-rewearable textile waste into high-quality raw materials**, enabling a truly circular textile economy in Europe.



AUTOLOOP is shifting the textile sector from a linear "take–make–waste" model to a closed-loop system.

Dr. Thomas Fehn, Project Coordinator,
Fraunhofer UMSICHT.

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OUR APPROACH

An Integrated Circular Recycling System

AUTOLOOP combines **innovative technologies at every step of the value chain to ensure a more sustainable textile value chain:**



Sorting: The project uses an **AI-powered automated** system to identify and classify fibres more efficiently in mixed textiles with accuracy. *AUTOLOOP's sorting system aims to sort **10 times faster** than manual methods, cutting sorting cost by **50–75%**.*



Recycling: The project uses pollutant-resistant chemical recycling processes to recover fibres from mixed textiles, producing high-quality materials for reuse. *Using **Ioncell®** and **ReSyn** technologies, AUTOLOOP aims to **recover over 95%** from non-rewearable textiles and achieve virginlike fibre quality.*



Tracing: The project ensures transparency across the entire textile value chain. *Using integrated smart tracers (**IntegriTEX®**), AUTOLOOP's cloud-based, Digital Product Passport-compatible Data Hub connects data across sorting, recycling and manufacturing, enabling end-to-end traceability.*

EXPECTED IMPACT

Towards Environmental Sustainability

Europe's textile industry is highly resource-intensive and polluting, with fast-fashion waste among the fastest-growing streams. By 2050, scaled AUTOLOOP technologies could:

- **Recycle around 1.24 million tonnes of non-rewearable textile waste per year**
- **Achieve up to 96% material recovery rate**
- **Save 12.5B m³ water per year**
- **Significantly cut demand for virgin fibres** such as cotton and polyester
- **Remove legacy chemicals and pollutants, delivering safe-by-design recycled materials** that comply with EU regulations

A EUROPEAN COLLABORATION

Driving Systemic Change Together

AUTOLOOP unites **14 partners from 7 countries**, under the coordination of Fraunhofer UMSICHT. Together, leading research organisations, technology providers, SMEs and industrial partners are redesigning how Europe collects, sorts, recycles and tracks non-rewearable textiles.



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