

Chemical Recovery of Waste Textiles: Value chains, LCA and scenario-analysis of circular processes

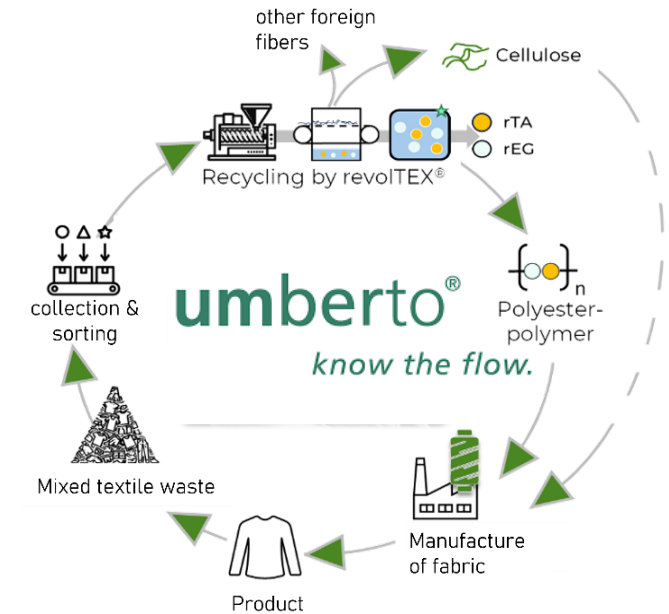
Despite growing awareness, textile recycling is still in its infancy: Recycling fibers account for only about 8.5% of the global fiber market, and only a small portion of that comes from true fiber-to-fiber recycling. Current mechanical-thermal recycling processes often do not return the raw materials to the original production process after preparation, but rather use them for inferior products. Complex textile blends such as PET/CO textiles (polycotton) remain a challenge, as fiber blends, colors, coatings, and impurities make effective recycling difficult.

Possible tasks:

- Conduct process- and value-chain-oriented life cycle assessments (LCAs) using Umberto 11 including system boundaries and data foundations
- Getting familiar with LCAs and umberto®
- Further development of the value-chain-oriented process model
- Conducting parts of the LCA
- Scenario development, analysis, and evaluation (e.g., yield, quality, energy carrier, transport, and processing intensity sensitivities)
- Comparison of fossil fuel input required to produce textiles from virgin materials vs. from recycled materials

Prior experience with Umberto is an advantage but not required. You can acquire the necessary skills with the software in the course of the thesis.

A personal introduction to the topic can be provided at any time. The tasks and scope of the work can be adapted individually or according to the type of work. 😊



Begin immediately or according to arrangement

Interested? Any further questions?
Feel free to contact us 😊



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