Institut für Textiltechnik und Lehrstuhl für Textilmaschinenbau
RWTH AACHEN UNIVERSITY

Project title:	AnReTex - Development of an analytical method for testing the purity of recycled textiles
Partner:	imat-uve GmbH, Gerstel GmbH & Co. KG, Recytex GmbH & Co. KG, Forschungsinstitut für Textil und Bekleidung (FTB), Hochschule Niederrhein
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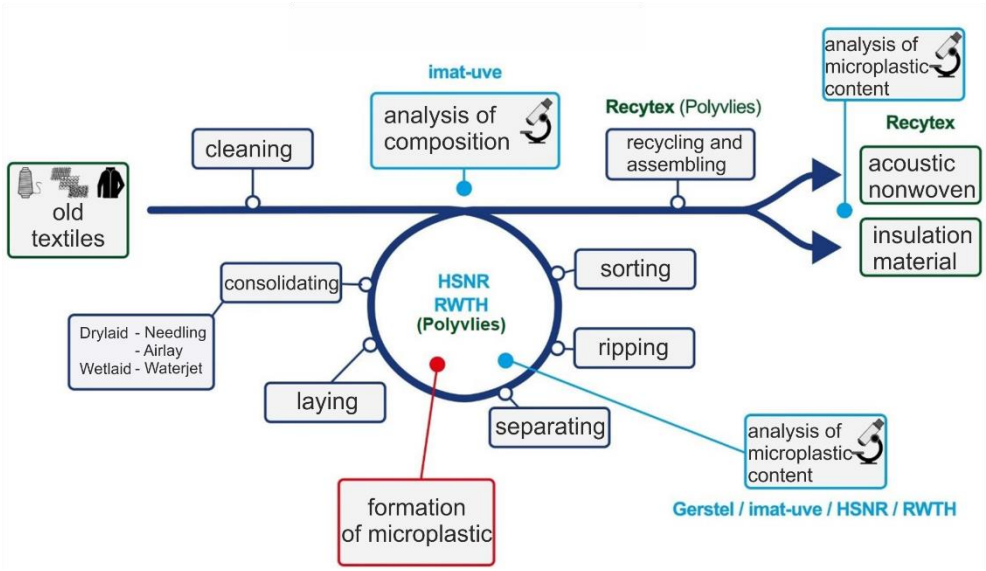
Mission Statement

The aim of the AnReTex research project is the development of an analysis method based on an automated TED-GC/MS that has been optimised for the textile industry. This is to be used to analyse the composition of textiles for recycling, possible textile auxiliaries and pollutants as well as the composition of microplastic particles of textile origin. Embedded in this, a room textile made of recycled fibres is to be developed, which on the one hand will be used to be able to optimise the analysis method as close to practice as possible, but at the same time will also explore new possibilities of how textiles can bind microplastics from the room air in the future.

The following figure illustrates the sub-steps of the mechanically very "brutal" process and highlights in red the formation of microplastics as an almost constant accompanying effect.



In order to validate the developed method, suitable fibrous standard particles with a defined size distribution must be produced, which consist of different polymers as well as additives (e.g. UV stabilisers) and impurities. The previously defined standard particles will be used to develop a suitable test method for measuring particle emissions in the air.
For the project, the production of a technical textile in the form of an acoustic textile from the waste textiles is chosen. This end product places high demands on the function and also on the freedom from pollutants and particles, especially with regard to the lowest possible discharge of airborne microplastics.

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