Institut für Textiltechnik und Lehrstuhl für Textilmaschinenbau | RWTH AACHEN UNIVERSITY

BIOTEXFUTURE

LIGHT LINING
A lightweight super-insulating nonwoven for sportswear

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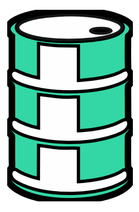
Motivation

State of the art insulation materials consist of



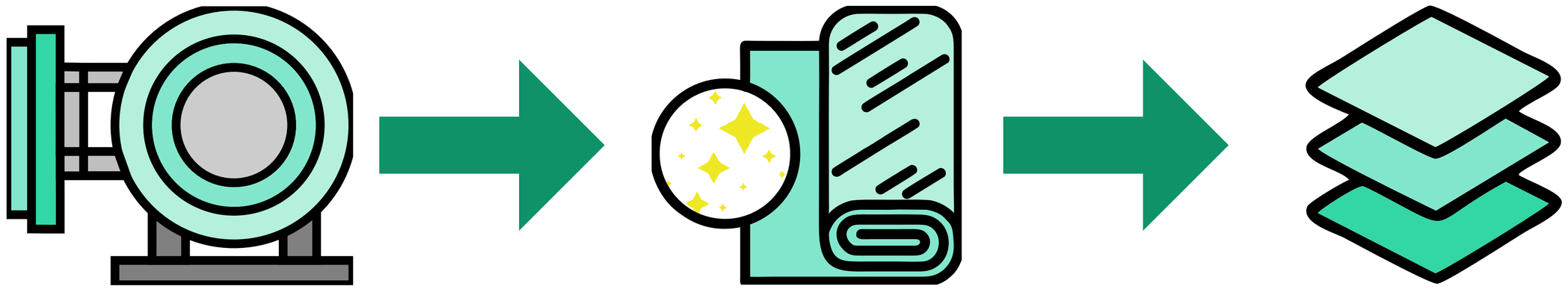
Polyester

Petroleum based
Bulky insulation material
Poorly recyclable
Non biodegradable

Down Feathers

Animal product
High price
Bulky insulation material

Approach



Supercritical Drying of an cellulose nonwoven precursor to solidify the nanoporous structure in the material

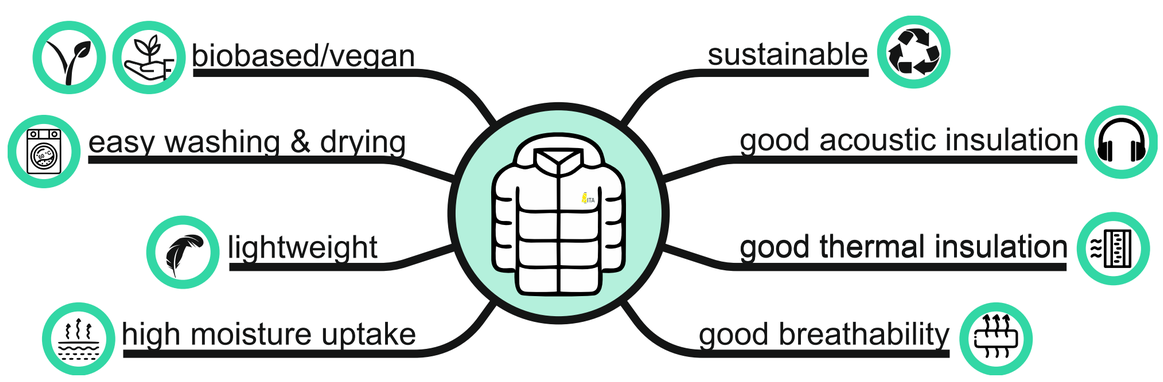
Finishing of the dried nonwoven in regards to apparel requirements like washability or antibacterial behaviour

Implementation into a demonstrator garment in combination with other te

Objectives

- A **proof of concept** for a new cellulose aerogel nonwoven for outdoor insulation clothing
- Development of a **first demonstrator** garment
- Accompanying **assessments** with the TransitionLab to determine material acceptance, desired characteristics, and product acceptance
- Analysis of the societal and economic impact of a new **biobased**, **sustainable** and **vegan** hightech insulation material

Advantages LIGHT LINING approach



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