

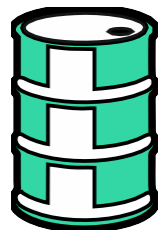
LIGHT LINING

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

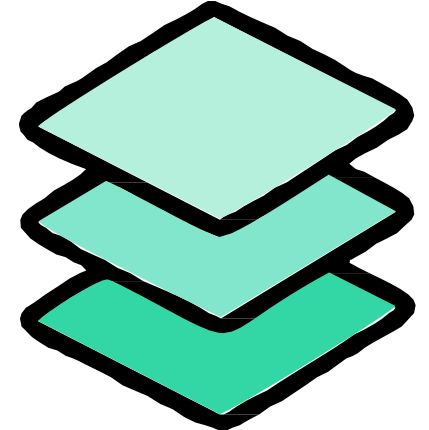
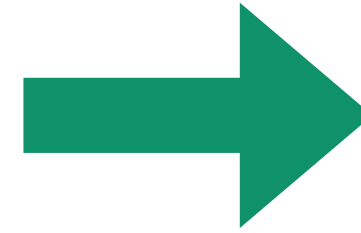
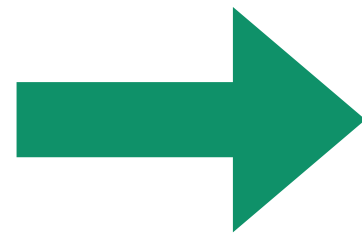
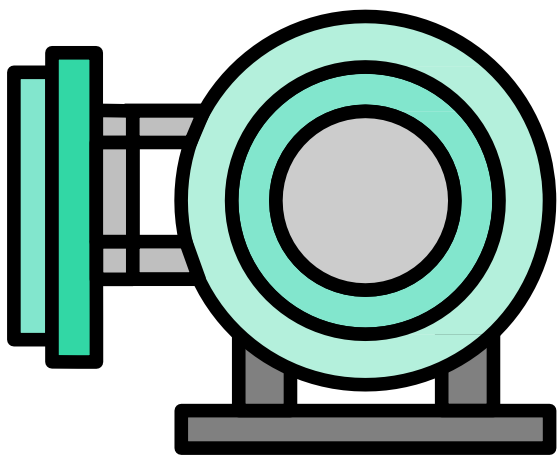


Down Feathers

Animal product High price
Bulky insulation material



Approach



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

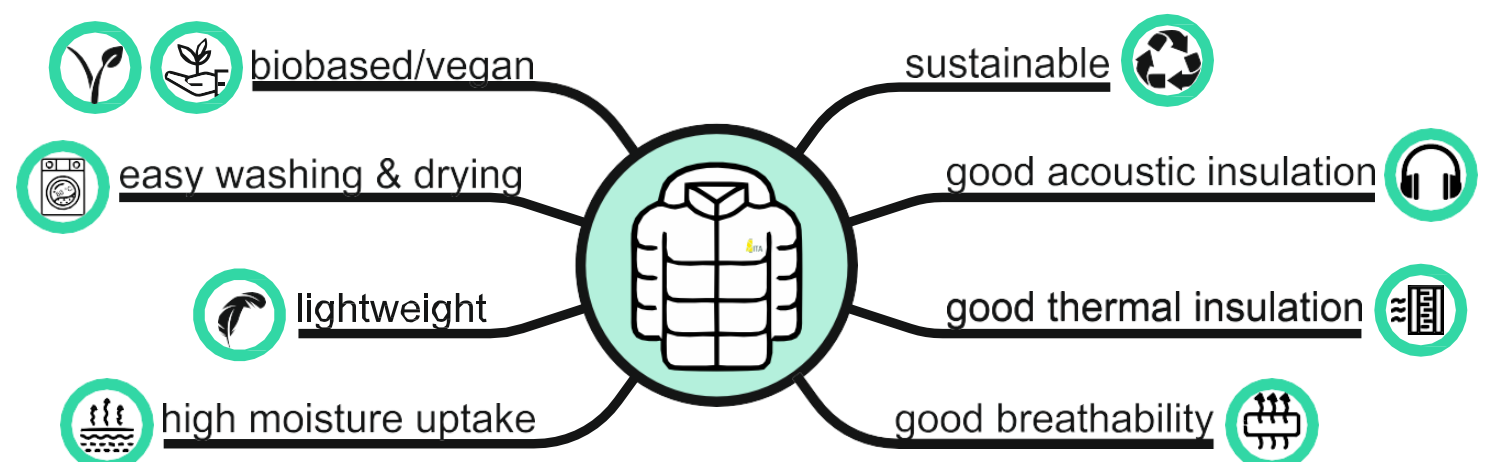
Finishing of the dried nonwoven in regard to apparel requirements like washability or antibacterial behaviour

Implementation into a demonstrator garment in combination with other textile layers

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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