

HuminTex – Humic substances for the antiviral functionalisation of ecologically sustainable nonwovens for respiratory masks

Problem / Motivation

- Functional Incorrect or careless handling of masks in use or used masks bears the risk of unintentional spread of active virus particles on the mask
- Improper disposal contributes to intensify the global plastic waste problem
- Use of fossil resources increases the carbon footprint

Solution

- Functionalisation of textile surfaces with antiviral, natural humic substances
- Use of biobased and biodegradable materials/textile chemicals (e. g. PLA, chitosan, amylopectin) for mask production and mask functionalisation
- Binding of humic substances to the textile surface using wet-chemical technologies and low-energy electron beam technology (e-beam)

Project Partner

ZIRKON – Zittau Institute for Process Development, Circular Economy, Surface Technology, Natural Materials Research at Hochschule Zittau/Görlitz – University of Applied Sciences

Fraunhofer Institute for Electron Beam and Plasma Technology FEP

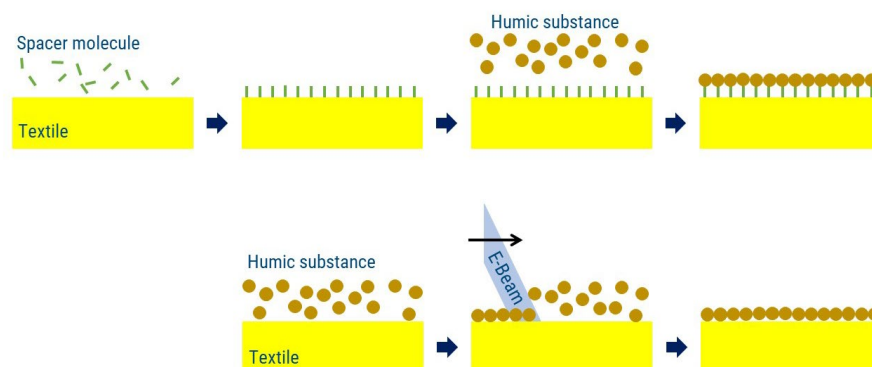
Zschimmer & Schwarz Mohsdorf GmbH & Co. KG

Sentias GmbH & Co. KG



Project Launch

01/2023



Schematic representation of possible technology for binding humic substances to the textile surface – wet chemical (top), electron beam technology (bottom)

Acknowledgement

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