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Mein Zeichen: MP
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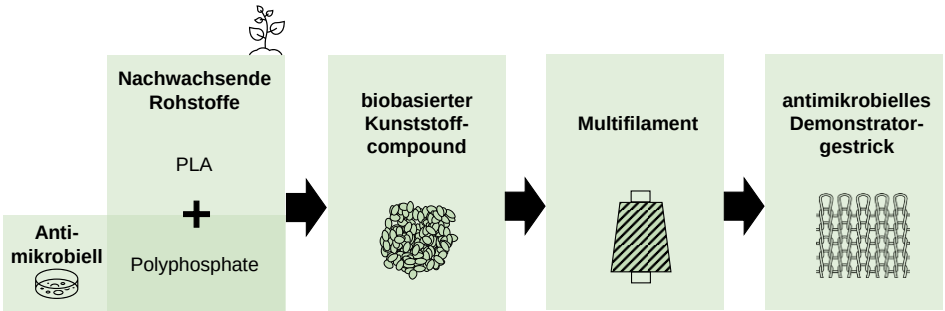
Project titel:	Sustainable anti-microbial textiles functionalized with polyphosphate – PolyPFiber
Partners:	Lehrstuhl für Biotechnologie der RWTH Aachen University (Bio VI) Hoffmann & Voss GmbH (H&V)
Duration:	10/2021 – 03/2022
Funding:	BioTexFuture, Seed Fund Project

Mission Statement:
The functionalization of fibers enables the production of textiles with antimicrobial properties. Fibers or textiles with antimicrobial properties are relevant for preventing the spread of bacteria or fungi on or on a textile, especially in sportswear or on face masks. The research gap of conventional antimicrobial finishes, some of which are controversial, is the considerable environmental impact and toxicity caused by the chemicals used, e.g. silver ions, bisphenol or ammonium compounds. In addition, petroleum-based, non-renewable polymers are used as fiber material. The switch to bio-based raw materials offers enormous CO_2 savings potential as well as sustainable use of resources. To demonstrate exactly this potential, this research project addresses the production of a technical, antimicrobial textiles based on biological raw materials. The production steps required for realization (compounding, filament extrusion and further textile processing) are also adapted to bio-based raw materials.

Approach:
The aim of PolyPFiber is to produce an antimicrobial demonstrator knit of PLA multifilament yarn additivated with polyphosphate (see Figure 1). Polyphosphate creates the antimicrobial effect. The use of PLA and polyphosphates, which can be obtained from renewable raw materials (rapeseed meal, oilseeds), sets it apart from conventional materials and often expensive and environmentally harmful additives (nanosilver particles).



Approach of the Project PolyPFiber

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