

PBStex – Evaluation of the potential of polybutylene succinate in textile applications

General information

- Funding Agency/Call: AiF Cornet (20th Call for Proposals)
- Partner: Institut für Textiltechnik of RWTH Aachen University (GER), Centexbel (BEL), Forschungskuratorium Textil (GER)
- Duration: June 1, 2016 – May 31, 2018

Mission Statement

The replacement of conventional oil based polymers by polymers with a bio-based origin is an innovative and in the long term necessary goal. In recent years a significant progress has been made in the development of polymers from renewable resources with the similar processability and functionality as conventional polymer materials. Several biobased polymer types have been developed, each having its own limitations. PBS is expected to become an important source of biobased material in the coming years. A production volume of 630 kton per year is estimated to be reached in 2020. PBS production from renewable feedstocks has been announced by various industrial consortia (Mitsubishi, Reverdia, Sinoven). PBS has (on small scale) been demonstrated to be suitable for film blowing (e.g. mulch films, food packaging), thermoformation (e.g. cutlery, coffee cup lids) and filament extrusion (e.g. fishing lines). The step to commercial application is at this moment however not yet been taken.

The main goal of the project is the screening of the use of PBS for melt extrusion applications and to demonstrate its applicability for selected end products to the industry. The project will result in a selection of polymer grades suitable for fibre formation, optimisation of polymer formulation via adding functionalization and processing additives, guidelines per end application in which high-quality fibres can be produced, and the determination of maximum properties of the end products that can be obtained. Melt-spinning trials at lab- and pilot-scale as well as at technical scale are performed for development of a reproducible spinning process. Furthermore, the obtained yarns are processed to textile demonstrators, e.g. woven fabrics and nonwovens.

The mission statement of the 'PBStex' project is sketched in figure 1.

Univ.-Prof.
Prof. h.c. (Moscow State Univ.)
Dr.-Ing. Dipl.-Wirt. Ing.
Thomas Gries
Institutsleiter

Benjamin Weise
Researcher

15.06.2016

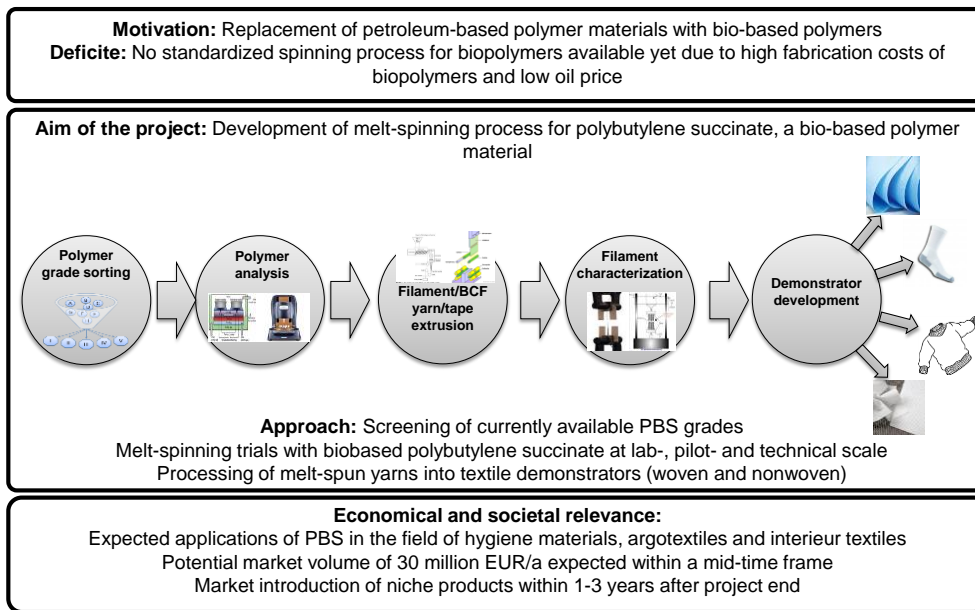


Fig. 1: Research procedure of the 'PBStex' project

Acknowledgement

Greatful acknowledgement goes to the *Arbeitsgemeinschaft industrieller Forschungsvereinigungen (AiF)* which is funding the project within the frame of the 20th CORNET Call (project number 165 E).

Contact

M.Sc. Benjamin Weise
 Institut für Textiltechnik, RWTH Aachen University
 +49 (0) 241-80 23460
 benjamin.weise (at) ita.rwth-aachen.de