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CannaPul – Development of sustainable profile structures from renewable raw materials

Co-funded by the European Union

This project is co-financed from tax revenues on the basis of the budget adopted by the Saxon State Parliament.

Problem / Motivation

- Composite structures with hemp bast as reinforcement achieved promising results that correspond to a tensile modulus of elasticity of 60 % of a glass fibre composite
- There is no process suitable for industrial use for the production of the required semi-finished thread-like products or rovings
- So far, bundled hemp bast strands from unroasted material have been developed as semi-finished products under laboratory conditions at STFI using the KEMAFIL® process
- The aim of the project is to compensate for the fluctuating quality of the hemp bast strand in terms of tensile strength and fineness by further developing the technology and process sequences on the way to improving the industrial suitability of the semi-finished product or roving

Solution

- Development of a technology to remove, pre-sort and measure hemp bast directly from the peeling machine
- Staggered feeding of the bast segments in the strand formation process to bundle a uniform strand/roving
- Processing of the strands/rovings on a pultrusion line into a technical semi-finished profile product

Micrograph of a thermoset composite part made from hemp bast

Project Launch

05/2024

Project Partner

Fraunhofer Institute for Machine Tools and Forming Technology IWU

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