

Formstable Material made of Collagen

INNOVATIVE – SUSTAINABLE – ECONOMICAL

The HTW Dresden, University of Applied Sciences in Saxony, has a long-standing research focus on sustainability and innovation. In the past few years, it was able to develop a new, dimensionally stable material made of collagen composites. This [collagen-based layer material](#) is suitable as a film or molded part for potentially different purposes, e.g. tubes, containers. Depending on the processing method, 2D and 3D geometries with variable layer thickness can be created. The material, which belongs to the group of bio-based materials, has a natural, caramel brown color.

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Compared to many commercially available biomaterials and bioplastics, collagen composite is characterized by its complete compostability. As proven by laboratory testing (cress test, daphnia test), no harmful or poisonous residues are formed during degradation. The basic material is an inexpensive biopolymer that can be processed on an industrial scale, e.g. via extrusion. The technical properties of the material can be controlled by adding certain additives and crosslinkers. This also includes color properties, e.g. white and black, as well as the introduction of additional functional layers. With regard to product-related further processing, thermal joining and ultrasonic welding processes are possible options. Temperature-related characteristics as well as water vapor permeability are being investigated especially for the packaging industry.

VALIDATION

The research results are currently in the experimental stage with test setups in the laboratory and proof of functionality (TRL 4). In the next step, potential fields of application are to be determined and – together with partners from the business world – specific usage profiles are to be developed and validated. A particular focus is on the areas of consumer goods, food and packaging. The Federal State Ministry for Economic Affairs [SMWA](#) is funding the project as part of the validation funding for a total of 18 months. Coordination and networking, incl. several conferences and panels, take place centrally via the [futureSAX](#) innovation platform.

PARTNER WANTED

For the effective further development and validation of the collagen-based coating materials, the HTW Dresden is looking for a strategic partner from the industry. The company's core business should preferably be in the area of consumer goods & packaging. Involvement in the associated supply and value chain is preferred. In addition to financial participation, advice on content is particularly desirable.

[HTW Dresden](#) has many years of experience in the planning and implementation of cooperative research projects. As a university for applied sciences, we are in constant communication with businesses and have a broad research network.

PROJECT TEAM



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Polymer chemistry, materials, analysis,
biopolymers, bio-based materials



Prof. Dr. Swen Günther

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Knowledge and technology transfer, transfer
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Research associate and PhD student
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Biopolymers, bio-based materials, material de-
velopment and processing



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Marketing, business model development, pa-
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