

04 December 2025

### STFI Media Service

## The region of renewable raw materials: Central German Alliance for Bioplastics

The development of sustainable plastic solutions is rapidly gaining importance in light of global environmental pollution, dwindling fossil resources and ambitious climate protection targets. As part of the regional alliance RUBIO, which brings together 18 partners from central Germany and the Berlin-Brandenburg area, the bio-based and biodegradable plastic polybutylene succinate (PBS) was comprehensively investigated, starting with the raw material, through the manufacturing process, to industrial application. The aim was to evaluate the potential of PBS as an environmentally friendly alternative to polyethylene and to create the technological basis for new sustainable value chains. As a partner in the alliance, STFI was able to demonstrate that the bioplastic PBS is suitable for textile processing using the example of a net for straw bales.

### The starting point: bioplastics sought as a substitute for PE

Increasing reports of macro and microplastics everywhere on earth, the finite nature of fossil resources, EU climate protection targets, and the call for CO<sub>2</sub> reduction compel all stakeholders, especially the plastics industry, to act promptly. Bio-based and simultaneously biodegradable plastics appear to be valuable raw materials for many applications, ranging from the packaging industry to the textile sector and agriculture. The aim of this project was comprehensive investigation of polybutylene succinate (PBS) from raw material to its industrial applicability. In order to qualify the biopolymer as a substitute for polyethylene (PE), its material properties were tested and evaluated with regard to their suitability for a wide range of applications.

### The textile processing of the bioplastic PBS

During project work, STFI main task was to explore opportunities and limits of technological processing of PBS materials (resins, film, nonwoven fabric, ribbons) into textile end products. Investigations were carried out on processing behavior of resins to nonwoven fabrics, followed by cutting processes into narrow ribbons, as well as studies on cutting and stretching PBS films and resins into ribbons. Subsequently, these ribbons were used to produce surfaces on knitting and weaving machines. As a result, nonwoven fabrics, ribbons, and textile structures are available, which will be further optimized in subsequent projects. It has been possible to develop a knitted straw bale net that meets the requirements regarding mechanical properties of DLG (German Agricultural Society) for novel bio-based plastics.

#### STFI Media Contact

Kareen Pfab | Public Relations

☎ +49 371 5274-197

🌐 [www.stfi.de](http://www.stfi.de)

✉ [kareen.pfab@stfi.de](mailto:kareen.pfab@stfi.de)

🌐 [Follow us](#)

Sächsisches Textilforschungsinstitut e.V. (STFI)

Annaberger Str. 240

09125 Chemnitz | Germany

04 December 2025

**STFI Media service**

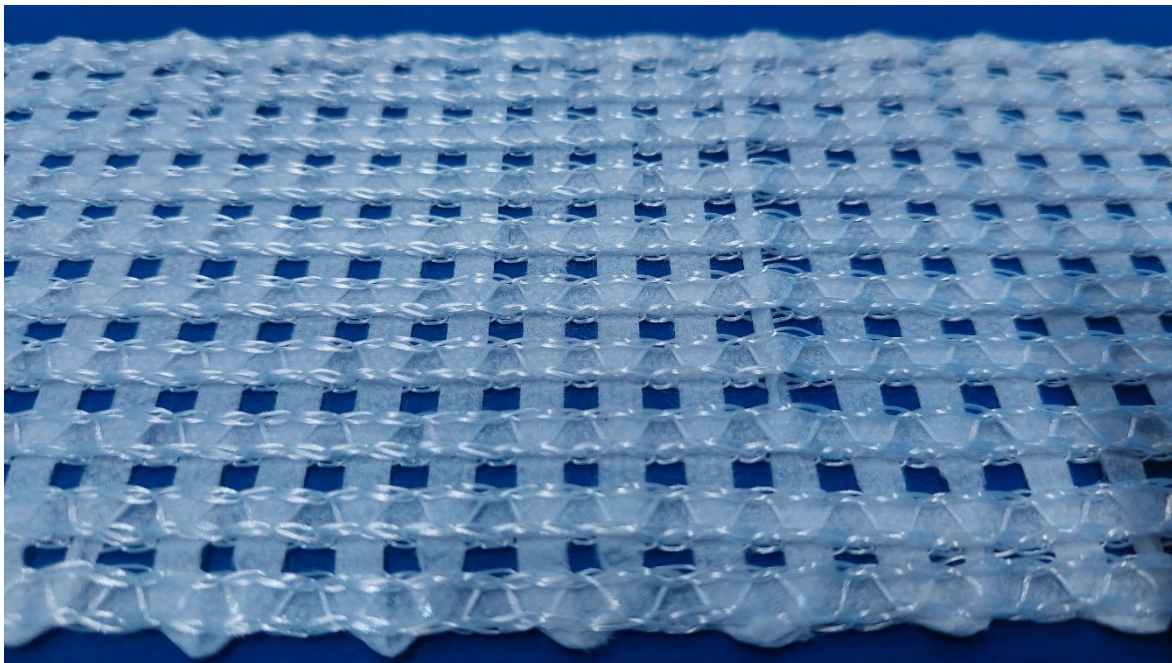


## Success and outlook

The results include spunbonded fabrics, ribbons and textile structures. A knitted straw bale net has been successfully developed that meets the requirements of the DLG (German Agricultural Society) for innovative bio-based plastics in terms of mechanical properties.

The focus for the future is on optimising textile production processes for the bioplastic PBS. The RU-BIO2Value project was launched in December and will focus on applications such as injection-moulded reusable packaging, textiles and geotextiles, but also disposable packaging in upcoming studies by the consortium. At STFI, established textile processes are being converted to sustainable and renewable raw materials in order to use recycled or biodegradable materials for sustainable production.

## Photos



*Polybutylene succinate (PBS) film tape*



*Processing of PBS nets on site*



*Round baler*



*PBS nets secure the straw bales*

Photos in print quality are available on request.

### STFI Media Contact

Kareen Pfab | Public Relations

☎ +49 371 5274-197

🌐 [www.stfi.de](http://www.stfi.de)

✉ [kareen.pfab@stfi.de](mailto:kareen.pfab@stfi.de)

🌐 [Follow us](#)

Sächsisches Textilforschungsinstitut e.V. (STFI)

Annaberger Str. 240

09125 Chemnitz | Germany

04 December 2025

**STFI Media service**



## About RUBIO

RUBIO – the "Regional Business Alliance for the Development of Value Chains for Technical Bioplastics in Central Germany" – brings together 18 partners from Saxony, Saxony-Anhalt, Thuringia and the Berlin-Brandenburg region. The alliance includes six small and medium-sized enterprises, seven large companies and five research institutions. They contribute extensive experience and technical expertise in biotechnology, mechanical and plant engineering, compounding, product design and recycling. Together, RUBIO pursues the goal of further developing bio-based plastics technologically, establishing new value chains and creating sustainable solutions for industrial applications.

## About STFI

The STFI in Chemnitz has been an outstanding innovation partner and service provider for its customers since it was founded in 1992. Textile materials have shaped our activity profile ever since. The non-profit institute addresses technical and social issues through an open, interdisciplinary and reliable approach. At STFI, the main topics of research and development are technical textiles, nonwovens, lightweight textile engineering, functionalisation, recycling, digitalisation and AI. At the Centre for Textile Sustainability, the focus is on application-oriented research into resource efficiency and energy-optimised processes. Additionally, STFI gathered many years of experience and expertise in textile testing as well as certifying Personal Protective Equipment (PPE). Under the name "STFI Academy", the STFI regularly offers modules and courses for specialist qualification and further training, designed to support employers in the textile industry. The STFI has been an affiliated institute of the Chemnitz University of Technology since 2006. Furthermore, it is actively involved as a member of the Zuse Association and the Saxon Industrial Research Association (SIG).

Further information: [www.stfi.de](http://www.stfi.de)

### STFI Media Contact

Kareen Pfab | Public Relations

☎ +49 371 5274-197

🌐 [www.stfi.de](http://www.stfi.de)

✉ [kareen.pfab@stfi.de](mailto:kareen.pfab@stfi.de)

🌐 [Follow us](#)

Sächsisches Textilforschungsinstitut e.V. (STFI)

Annaberger Str. 240

09125 Chemnitz | Germany