

20 February 2024

**STFI Media Service**

## JEC World – Leading international trade fair for lightweight construction

STFI presents lightweight construction innovations at JEC World in Paris from 5 to 7 March 2024

At this year's JEC World, STFI will be presenting highlights from carbon fibre recycling as well as a new approach to hemp-based bast fibres, which have promising properties as reinforcement in lightweight construction. Visit us at the joint stand of the Saxony Economic Development Corporation and talk to our team of lightweight construction experts.

### *Green Snowboard*

At JEC World in Paris from 5 to 7 March 2024, STFI will be showcasing a snowboard from silbaerg GmbH with a patented anisotropic coupling effect made from hemp and recycled carbon fibres with bio-based epoxy resin. In addition to silbaerg and STFI, the partners Circular Saxony - the innovation cluster for the circular economy, FUSE Composite and bto-epoxy GmbH were also involved in the development of the board. The green snowboard was honoured with the JEC Innovation Award 2024 in the "Sport, Leisure and Recreation" category.

### *VliesComp*

The aim of the industrial partners Tenowo GmbH (Hof), Siemens AG (Erlangen), Invent GmbH (Braunschweig) and STFI united in the VliesComp project is to bring recycled materials back onto the market in various lightweight construction solutions. The application fields "Innovative e-machine concepts for the energy transition" and "Innovative e-machine concepts for e-mobility" were considered as examples. On display at JEC World in Paris will be a lightweight end shield for electric motors made from hybrid nonwovens - a mixture of thermoplastic fibre components and recycled reinforcing fibres - as well as nonwovens with 100% recycled reinforcing fibres. The end shield was ultimately manufactured with a 100% recycled fibre content. The tests showed that, compared to the variant made from primary carbon fibres using the RTM process, a 14% reduction in CO2 equivalent is possible with the same performance. The calculation for the use of the prepreg process using a bio-resin system shows a potential for reducing the CO2 equivalent by almost 70 %.

### *Bast fibre reinforcement*

To increase stability in the plant stem, bast fibres form in the bark area, which support the stem but, in contrast to the rigid wood, are very flexible and allow slender, tall plants to move in the wind without breaking. A new process extracts the bast bark from hemp by peeling. The resulting characteristic values,

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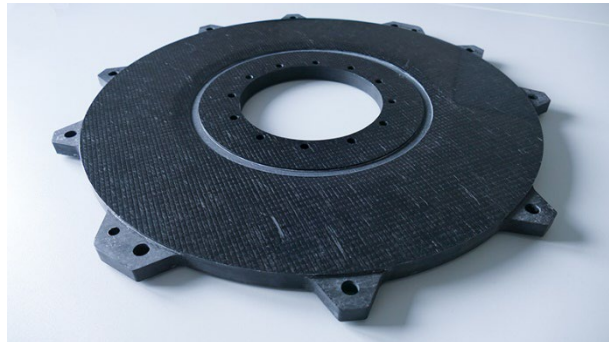
such as tensile modulus of elasticity, breaking strength and elongation, are very promising in comparison with the continuous rovings made of flax available on the market. The material could be used as reinforcement in lightweight construction. At JEC World, STFI will be exhibiting reinforcing bars that have been processed into a knitted fabric using a pultrusion process based on bio-based reinforcing fibres made from hemp bast for mineral matrices..

### Meet us in Paris

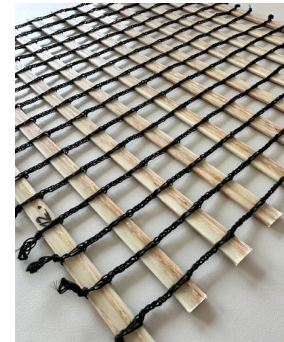
The green snowboard from silbaerg, the bearing shield for the electric motor and the bast fibre reinforcement can be seen together with other STFI research highlights from 5 to 7 March 2024 at the JEC Group in Paris in Hall 5 at Stand D107 of the Saxon Textile Research Institute e.V. (STFI). Together with our partners Cetex Institut gGmbH, Chemnitz University of Technology - Institute of Lightweight Structures (IST), LSE-Lightweight Structures Engineering GmbH, we will be at the joint stand of Wirtschaftsförderung Sachsen GmbH and look forward to seeing you there!



Green Snowboard  
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silbaerg GmbH



Shield for drive motor in the rail vehicle sector  
Copyright: STFI



Knitted bast fibre reinforcement  
Copyright: STFI

## 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 Industry 4.0. Additionally, STFI gathered many years of experience and expertise in textile testing as well as certifying Personal Protective Equipment (PPE) and geosynthetics. In the future, the STFI will continue along this path and establish the Center for Sustainability in the next step. 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)

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