JEC Composites World 2018
Companies from Saxony

Paris Nord Villepinte,
Exhibition Center

March 6 – 8, 2018

Hall 5a, C 62

FUTURE.

Economic Affairs, Labour and Transport

SAXONY!

STAATSMINISTERIUM
FÜR WIRTSCHAFT
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SAXONY! – One of Germany's leading places for materials research

One of Saxony's strengths can be found in the variety of industries present. Saxony is the birthplace of German industrialization, and long-standing traditional industries – such as mechanical and automotive engineering – continue to flourish here. Today, the region is also renowned as "Silicon Saxony" – Europe's leading and the fifth largest microelectronics cluster in the world. Researchers and young entrepreneurs between Leipzig and Dresden are working hand in hand in the future sectors biotechnology and environmental technology.

The constant demand for innovative materials from these industry sectors in turn stimulates research and production of new materials. Saxony holds an international top position in diverse fields of materials research and development. Already in 1993, the Materials Research Network Dresden (MFD) was created in which six institutes at the Dresden University of Technology and eight non-university research facilities are active in interdisciplinary research and development today. Two of Europe's largest centers for R & D on production and processing technologies for lightweight construction materials are found at the Universities of Chemnitz (MERGE) and Dresden (ILK). Within the scope of the globally unique Cluster of Excellence "Center for Advancing Electronics Dresden (cfaed)", the researchers work on entirely new technologies for tomorrow's IT on the basis of novel materials – for example, silicon nanowires, carbon nanotubes, organic materials.

And, the German joint research project "futureTEX" – headed by the Saxon Textile Research Institute (STFI) Chemnitz – advances pioneering methods and production processes in the field of technical textiles and, thus, seeks to develop customized textile-reinforced future products with entirely new functions and for innovative fields of application.

www.business-saxony.com

Cetex

Institut für Textil- und Verarbeitungsmaschinen gemeinnützige GmbH

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www.cetex.de

Cetex is a non-profit application-oriented research institute for textile and process engineering. The focus is on developing technologies and machines for technical textiles and the field of fiber composites, especially for light-weight industrial applications. This includes, amongst other things, the development of machines to process high-performance continuous fibers (carbon/glass/basalt/aramid) and to produce unidirectional and multidirectional fiber-reinforced multilayer composites and structures. Further projects deal with bionic fiber-reinforced structures for high-performance applications, near net shape preforms and tailored organic sheets. Cetex developed equipment for Ce-Preg® thermoplastic prepregs made of carbon, glass and basalt fibers with a thermoplastic matrix and an unidirectional fiber alignment. The range of services is complemented by knitting machines for functional 3-D textiles with adapted properties and special-purpose sewing machines for reinforcing composite preforms.

The research tasks are completely realized by Cetex, from the idea and the concept to the prototype.

Elbe Flugzeugwerke GmbH

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Phone: +49 351 88393276
composites@efw.aero
www.efw.aero

Elbe Flugzeugwerke GmbH (EFW) has more than 20 years´ experience in manufacturing of lightweight components: more than 30.000 components per month, 150 different lay-ups, about 50.000 different parts.

EFW has a large and diversified aeronautical composite product range. We manufacture various Cabin Interiors:

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Certifications

DE.21G.0005, DE.145.0040, EASA.21J.054, DIN EN 9100 / DIN EN 9110

Embro GmbH

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Phone: +49 3744 1842290
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www.embro-tech.de

Embro is a German manufacturer of innovative technical embroideries. In close cooperation with our customers from industry and research, we develop and produce, for example:

- Electric heating elements & heating pads
- Textile sensors & conducting paths
- RFID antennas & conductive textiles
- Smart textiles for all kinds of applications.

Our products are highly flexible and very versatile. We guarantee and assure the highest possible quality and efficiency through CNC embroidery / placement machines. We process a broad range of wires, litz wires, tubes, and support materials. Complex layouts and shapes can be cut with the greatest possible precision in the millimeter range from textile surfaces into finished individual parts with the help of modern laser machines. This is followed by electric assembly with the help of advanced crimping and connecting technologies. We carry out both small and large batch productions in the shortest possible time. Due to our quality management certification in accordance with the ISO 9001 standard, we're able to meet and assure the highest standards. Please feel free to test us!

Fraunhofer Institute for Ceramic Technologies and Systems IKTS

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Fraunhofer IKTS conducts applications-oriented research in the field of high-performance ceramics. The institute's three sites in Dresden and Hermsdorf (Thuringia), Germany, collectively represent Europe's largest R&D institute dedicated to the study of ceramics.

The IKTS site in Dresden-Klotzsche offers methods, sensors and devices for different kinds of nondestructive testing. Furthermore, the work focuses on services and research cooperations for materials and components diagnosis, structural health monitoring, nanoanalysis and sensorics as well as biotechnological and environmental techniques.

Focus of the work at the Hermsdorf site is on applications in the fields of energy and environmental technology (Greentech Campus Hermsdorf), microsystems technology and medicine, as well as mechanical and plant engineering.

At JEC World 2018 Fraunhofer IKTS presents the EddyCus® MPECS Lab system and APS coated CFRP components at the joint booth of the Saxony Economic Development Corporation.

Fraunhofer Institute for Machine Tools and Forming Technology IWU

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info@iwu.fraunhofer.de
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The Fraunhofer institut IWU offers a wide range of research possibilities in the field of composites and lightweight design:

- All aspects of lightweight engineering, incl. material characterisation, design concepts, structural simulation, prototyping, testing
- Smart composites and function integration
- Pultrusion
- Near-Net-Shape and load-path-adapted fabrics
- Organosheet preforming
- Hybrid metal foam technologies
- Novel 3D Printing solutions

Hightex Verstärkungsstrukturen GmbH

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01665 Klipphausen – Germany
Phone: +49 35204 39300
info@hightex-dresden.de
www.hightex-dresden.de

Preform manufacture
- 2D Tailored Fibre Placement (TFP)
- 3D Tailored Fibre Placement (TFP)
- 2D combination of woven fabric and non-crimp-fabric
- 3D combination of woven fabric and non-crimp-fabric

Service
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- Cutting

Qualification
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- DIN ISO EN 9100
- Approved supplier Airbus
- Approved supplier Airbus Helicopter Germany
- Approved supplier Elbeflugzeugwerke
- Approved supplier BMW

IMA Dresden – Materialforschung und Anwendungstechnik GmbH
materials research and application technology

Wilhelmine-Reichard-Ring 4
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www.ima-dresden.de

Materials testing of plastics and composites

We are the partner you can contact when it comes to national and international testing requirements, whether you are dealing with materials, components or entire structures. Our engineers look forward to help you to run your testing programs and to standardise and certify materials. In the case of plastics and fibre-reinforced plastics, we test materials and prepare samples and laminates for you. In addition to this, IMA Dresden has extensive experience in the fields of adhesive technology, laminate design and material approval. Benefit from our comprehensive knowledge on preparing and running material tests, including not only static, cyclic and dynamic testing but also creep testing. Furthermore, we are at your service to answer any questions you may have about choosing and planning a test method and, of course, evaluating the results.

Our services cover a wide range, starting with fibre content testing and extending as far as determining physical, static and cyclical material characteristics. In principle, we are able to carry out accredited tests in line with all national and international standards, either in a standard atmosphere or at higher or lower temperatures.

Network "Joining Technologies for Hybrid Material Systems"
c/o Cetex Institut für Textil- und Verarbeitungsmaschinen gemeinnützige GmbH

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SMART JOINING SOLUTIONS FOR AFFORDABLE LIGHTWEIGHT DESIGN

A key factor in establishing lightweight materials in the mass market are the competitive costs of materials. "FÜKOMP_hybrid" offers smart joining solutions and affordable lightweight design for large-scale production. Within this network, which is funded by the Federal Ministry of Economics and Energy, 20 companies and three research institutes are pooling their know-how in order to break new ground in joining hybrid materials. Successfully applying new lightweight materials requires a thorough re-thinking in the overall system of "material - structure - process - function".

Thus, the network does not only consider the joining process by itself, but starts out by developing new material systems with a maximum integration of functions. The network is an integral part of the Chemnitz lightweight design strategy for large-scale production processes.

Network "RESSOURCETEX"

c/o Cetex Institut für Textil- und Verarbeitungsmaschinen gemeinnützige GmbH

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RESSOURCETEX

Lightweight construction is a key technology of the future and one of the most important issues for all big car manufacturers and their suppliers worldwide. Wherever masses have to be moved, the optimization of weight is a main focus in order to save raw materials and energy. With their low weight and their outstanding mechanical properties, fiber-reinforced plastics offer a high potential for lightweight construction.

Due to high material costs and high material offcuts, fiber-reinforced plastics are almost exclusively be used for components in aviation sector, luxury automobile industry and racing. The current technologies are hardly usable for car production of high-volume carmakers, e.g. Volkswagen.

Thus, it is the aim of the network, which is funded by the Federal Ministry of Economics and Energy, to develop technologies to manufacture resource-efficient textile and fiber-reinforced plastic materials and products. Furthermore, the objective is to make lightweight construction based on fiber-reinforced plastic affordable and to develop technologies suitable for mass-production.

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OLU-PREG COMPOSITE GMBH

The OLU-Preg Composite GmbH corporation will present its unique product range of application-oriented thermoplastic OLU-Preg® NCF organic sheets at the JEC Paris 2018. The range of OLU-Preg® products encompassing uniaxial, biaxial, triaxial, and quadraxial glass fiber reinforced thermoplastics, which we'll be presenting for the first time, demonstrates the excellent performance and flexibility of our textile-reinforced NCF compounds. Our customized OLU-Preg® thin-film laminates offer considerable design flexibility for load-optimizedlightweight component solutions. Demand-driven material developments are geared towards the requirements of subsequent and final processing.

Individual sheet thicknesses of less than 0.15 mm, customized fiber volume contents, and variable adjustments of the most diverse reinforcement directions result in an efficient material use and in saving resources during processing and application. The structural-mechanical UD reinforcement layers which are independent of one another in the multilayer design are the reason for the superb plastic deformability of OLU-Preg® while offering at the same time the best possible retention of the anisotropic compound material performances. With our closed value creation chain ranging from textile semi-finished products all the way to NCF organic sheets, OLU-Preg® offers customer-specified, mass produced lightweight material assembly.

RUCKS Maschinenbau GmbH

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Sächsisches Textilforschunginstitut e.V. (STFI)

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Based on the Center of Excellence in Nonwovens, the Center for Textile Lightweight Engineering, the Innovation Center of Technical Textiles and comprehensive testing/ certification services, the Saxon Textile Research Institute (STFI) dedicates its activities to specialized tasks in research and development of technical textiles. With the opening of the newly built Center for Textile Lightweight Engineering in Chemnitz in May 2017, STFI was able to set the next important milestone.

In addition to semi-industrial processes of processing carbon fibre waste into nonwoven, a second focus of work is the production of test specimens and components as thermoplastic or thermosetting composites based on a wide variety of technologies. The Center for Textile Lightweight Engineering is completed by an integrated testing laboratory, which is designed for the special needs of lightweight textile structures. Here, accredited tests on high performance fibres, semi-finished textile products and fibre-reinforced plastics can be carried out directly on site.

Chemnitz University of Technology

Institute of Lightweight Structures

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www.strukturleichtbau.net

TECHNISCHE UNIVERSITÄT CHEMNITZ

MERGE Cluster of Excellence

iST

Chemnitz University of Technology is a leading European research institute in the field of lightweight construction. The fusion of conventional materials and manufacturing technologies creates an incredible range of new solutions. Components are lighter and can be produced in less time with fewer production steps. This saves energy and valuable resources.

Our scientific work focuses on the research and development of integrative plastic technologies for the production of lightweight structures and systems. The starting materials are specifically modified high-performance polymers and compounds made from renewable raw materials, novel thermoplastic prepregs and bionically adapted semi-finished textile products. Fibre reinforced components are created by the use of carbon, glass or basalt fibres.

The future lies in the additional integration of intelligent materials and components. The Federal Cluster of Excellence MERGE for example integrates completely new actuators, sensors and measuring instruments directly into a rotor blade. The aerodynamics, energy consumption and maintenance cycles are thus considerably optimized. TU Chemnitz cooperates with renowned research institutes and companies throughout Europe.

Technische Universität Dresden

Institute of Lightweight Engineering and Polymer Technology (ILK)

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TECHNISCHE UNIVERSITÄT DRESDEN

Institut für Leichtbau und Kunststofftechnik

The **spectrum of the research** activities of the ILK stretches from research into fundamental concepts to application-oriented research and innovation-driven development projects in cooperation with industrial partners.

The work carried out at the ILK is characterized by the application of the Dresden Model of **"Function-integrative lightweight engineering in multi-material-design"** and consideration of all potential material combinations and applications. The scientists take the entire development chain into account when developing new concepts, processes and products: material selection – design – simulation – assembly – prototype testing – quality assurance – cost control.

Depending on the respective structural-technological requirements, the designs draw on all classes of material from steel, aluminium, magnesium and titanium to polymers, ceramics and composites featuring short-fibre, continuous-fibre or textile reinforcement.

TFP Technology GmbH

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TFP Technology GmbH Corporation is a German manufacturer of innovative textile fiber laminates and reinforcement structures made from high-performance fibers. We use CNC machines which place carbon rovings, glass or aramid fibers with great precision automatically onto carrier substrates. With this so-called tailored fiber placement process (TFP), fibers are placed in an optimal alignment; and preforms can be produced in large quantities without any waste. After the embroidered dry preforms have been deposited, they are processed further with such resin filtration methods as, for example, RTM. It is also possible to produce thermoplastic hybrid structures which can then be consolidated within the shortest possible time through hot pressing. The fiber composite compounds which are produced this way meet the highest standards with regard to stiffness and rigidity. Due to the parallel fabrication of components in one process step, high volume production is possible. The latest CNC technology permits us to produce components up to a size of 2000 x 2000 mm. Due to our experience in the field of smart textiles, it is also possible to integrate various functions.

We'd be happy to be your partner in your projects!

thermoPre® e.V.

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www.thermopre.de

thermoPre® – Developing, testing and marketing a new technology for manufacturing continuous, fibre-reinforced, thermoplastic, semi-finished products in a continuous, single-stage, direct process.

The production of thermoplastic preform materials using a single, direct processing technique, which suits both the fibres and the process, is the key element in the business of the innovative thermoPre® cluster.

The thermoPre® portfolio includes various textile reinforcement structures, partly and fully consolidated fibre-reinforced prepegs, robust multiple layer composites, new technologies, innovative machines, sample components, expertise in the field of calculating and design work, but also compact, interdisciplinary expertise along the complete value-added chain.

The network includes companies from engineering and plant construction, tool-making and mould making, polymer processing and textile and materials engineering. This interdisciplinary cooperation and the involvement of research institutes guarantee high levels of expertise for visionary and all-round innovations in future too.

SAXONY - A BUSINESS LOCATION AT ITS BEST

- Located in the heart of Europe: For centuries, Saxony has been the intersection of Europe's major thoroughfares
- DHL Hub Leipzig: Europe's most modern air cargo hub with 24 / 7 service
- Second highest GDP growth rate (over 25 %) of all federal states in Germany since the year 2000
- 95 % of Saxony's workforce possess at least a university entrance qualification / completed vocational training (OECD average = 78 %)
- Saxony is one of the "innovation leaders" in the European Union (Regional Innovation Scoreboard)
- Saxony enchants - with marvelous landscapes and cultural highlights

If you need more information,
please contact:

WIRTSCHAFTSFÖRDERUNG SACHSEN GMBH

(SAXONY ECONOMIC DEVELOPMENT CORPORATION)

WWW.BUSINESS-SAXONY.COM

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European Union
European regional
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Europe funds Saxony!