Expert Conference on the Topic of Composite Lightweight Constructions

5[™] INTERNATIONAL CFK-VALLEY STADE CONVENTION

"Automation - Simulation, Processes & Materials"

07-08 June 2011, STADEUM Stade, Germany



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Greetings

The innovation ability of companies and research institutes is decisive for success in international competition. A strong industry and excellence in science are the foundation for economic growth and secure jobs.

For more than 20 years a unique competence in the field of composite fiber lightweight construction has been developing at the location of Stade in Niedersachsen. CFK-Valley Stade e.V. pools together the complementary competences of almost 100 members, successfully supporting the innovation process in relevant companies, universities and research institutions.

The topic of this year's CFK-Valley Stade Convention "CFRP Automatization – Simulation, Processes and Materials" describes the high demands on all those who apply CFRP in different applications. Niedersachsen is the state of mobility in the heart of Europe. The automobile industry is the backbone of Niedersachsen's economy and the aviation industry, with over 30,000 highly qualified employees, holds a prominent position. The North German seaports, shipping companies and shipyards are Niedersachsen's gateway to the world.

The combination of economically strong companies and excellent experts at the CFK-Valley Stade Convention gives an important impetus for progress in different areas of mobility. For example, with the application of CFRP, weight can be reduced and, as a result, energy can be saved during the operation of aircraft, automobiles and ships. Particularly in automotive en-

gineering, important milestones were reached last year with the different lightweight construction concepts of large automobile manufacturers that entail the application of CFRP and a consistent lightweight construction of vehicles. This



is a step in the direction of an environmentally more friendly mobility of tomorrow.

Production costs must be decreased and technological challenges must be overcome in order for CFRP and CFRP technologies to penetrate the mass market. CFK NORD, Europe's largest CFRP research center, is open and will strengthen expertise in the automated manufacture of CFRP components in Niedersachsen. The state of Niedersachsen actively supports the developments at CFK-Valley Stade and will continue to develop this growth market in the future for Germany as an industrial location.

I wish all participants a successful run of the congress, interesting contacts and a pleasant stay in Stade.



Jörg BodeMinister for Economics, Labour and Transport of Niedersachsen

Greetings

Main focus of this year's CFK-Valley Stade Convention is on "CFRP Automatization – Simulation, Processes, Materials". The specific process design requirements call for a comprehensive view of the value chain in order to achieve in stable processes with high production quality within manufacturing.

CFK NORD has gone into operation and in February of this year the industrial CFRP recycling plant was opened, thus completing the value chain in Stade. At the same time recycling used material means closing the chain to start up a new cycle.

The lectures at this year's CFK-Valley Stade Convention deal with cross-sectoral issues on the topic of the automatization of CFRP. These can pertain to the continuous manufacture of textile performs, the development of dry-fiber placement strategies and automated vacuum infusion processes or digital process simulation. Of course insights gained from RTM technology are particularly interesting with regard to the automobile industry. The objective is always an increase in productivity during the complicated handling of the material in the production process. The gauge for the quality of the products is very high but it was still possible to advance developments in different branches of industries that enable a widespread application of CFRP.

The lectures will comprehensively deal with different requirements along the value chain and will supply the basis for intensive dialog within the framework of the exhibition. As at the convention last year, you may again expect presentations



in the exhibition of new products on the topic of CFRP from over 40 companies and research institutions. Interest in this year's convention was overwhelming from the beginning – a clear indication that we are operating in a growth market with high dynamics.

I wish all participants of this year's CFK-Valley Stade Convention interesting contacts and a lively exchange that will lead to new technical solutions and economic success.

Prof. Dr.-Ing. Axel S. Herrmann

Chairman of the Steering Board of CFK-Valley Stade e.V.

Composite Innovations Award

The "Composite Innovations Award" for developments with a particularly high degree of innovation in CFRP lightweight construction will be bestowed for the fifth time at the CFK-Valley Stade Convention

The "Composite Innovations Award" is endowed with a Master's grant for the new "Composite Materials/Composites" Master's course of studies valued at 18,000 Euro. The award is endowed by the City of Stade, CFK-Valley Stade e.V. and by the Private University of Applied Sciences Göttingen (PFH Göttingen).

All firms and institutes participating at the CFK-Valley Stade Convention are eligible to apply for this grant. Research and engineering performances that make particularly innovative contributions to the development of materials and processes for marketable carbon-fiber reinforced composite structures are included in the evaluation process.

The laureate will be determined by CFK-Valley Stade e. V. steering board and a representative of the City of Stade. The deadline for entries is **06 May 2011**.

Further information and application forms can be found on the Internet at www.cfk-valley.com/award







Program 07 June 2011

10:00

Greetings from the CFK-Valley Stade Convention GbR and the Company Partners, CFK-Valley Stade e.V. & Sperlich GmbH Prof. Dr.-Ing. Axel Herrmann, Chairman Steering Board CFK-Valley Stade e.V. [Stade]

Opening Speech

Dr. Georg Schütte, State Secretary at the Federal Ministry of Education and Research (Berlin) requested speaker

10:15

Keynote Lecture: The ALCAS CFRP door surround structure from scratch to the final test component

Dr.-Ing. Markus Kleineberg, German Aerospace Center DLR, Institute of Composite Structures and Adaptive Systems (Brunswick)

10:30 Coffee Break & Exhibition

Session Materials

Chairman: Prof. Dr. Richard Degenhardt, German Aerospace Center, DLR (Brunswick) & Private University of Applied Sciences (Göttingen)

11:30

Galvanic metallisation of CFRP devices

Dr. Andreas Dietz, Fraunhofer-Institute for Surface Engineering and Thin Films IST (Brunswick)

11:55

 $\mathsf{HexMC}^{\circ} \text{:} \ \mathsf{a} \ \mathsf{carbon} \ \mathsf{compound} \ \mathsf{suitable} \ \mathsf{for} \ \mathsf{highly} \ \mathsf{loaded} \ \mathsf{complex} \ \mathsf{structures} \ \mathsf{made} \ \mathsf{in} \ \mathsf{large} \ \mathsf{volume}$

Sylvain Delalande, HEXCEL Composites (Dagneux, France)

12:20

High performance foam cores for Omega profile stiffened monolithic structures in aircraft applications

Felix Goldmann, Evonik Röhm GmbH (Darmstadt)

12:45 Lunch Break & Exhibition

Session Simulation

Chairman: Dr. Matthew Beaumont, EADS Deutschland GmbH - Innovation Works (Ottobrunn)

14:30

Process simulations for composites forming of UD tape laminates

Prof. Remko Akkerman, University of Twente & TPRC (Enschede, The Netherlands)

14:55

Draping simulation – the key to low cost high performance net shape parts?

Andreas Knote, German Aerospace Center DLR, Institute of Composite Structures and Adaptive Systems (Brunswick)

15:20

Driving composite innovations with PLM software solutionsJoachim Bauer, Dassault Systemes Deutschland GmbH
(Stuttgart)

15:45 Coffee Break & Exhibition

Session Simulation

Chairman: Dr.-Ing. Tobias Wille, German Aerospace Center DLR, Institute of Composite Structures and Adaptive Systems (Brunswick)

16:45

Simulation for mass production of automotive composite structural components

Marquette Pierre, ESI Group (Bordeaux, France)

17:10

Numerical simulation of the crash behaviour of braided composites

Ralf Matheis, Institut für Kraftfahrzeuge (ika) – RWTH Aachen University (Aachen)

17:35

Shell- and solid modeling of composite structures as a base for simulation driven optizimation processes

Dr.-Ing. Cord Steinbeck-Behrens/Dr.-Ing. Matthias Hörmann, CADFEM GmbH (Hanover/Grafing)

18:30 Evening Event

Program 08 June 2011

09:15 Greetings

Dr. Jens Walla, Airbus Deutschland GmbH – Plant Stade (Stade)

Session Processes

Chairman: Dr.-Ing. Hilmar Apmann, Premium AEROTECH GmbH – Research and Development of Production Systems (Varel)

09:30

ASPIRATE, a new green process to machine CFRP safe, clean and efficiently

Joseba Perez Bilbatua, IDEKO-IK4 (Elgoibar, Spain)

09:55

Automated impregnation of thick preforms for cost-effective manufacturing of fibre reinforced plastics

Michael Kaiser, Institute of Aircraft Design - University of Stuttgart (Stuttgart)

10:20

The way to consequent lightweight design: Reflection of the efficiency in high volume productions

Andreas Hoberg, Ingenics AG (Hamburg)

10:45 Coffee Break & Exhibition

Session Processes

Chairman: Dr.-Ing. Martin Röhrig, Composite Technology Center Stade GmbH (Stade)

11:30

Stringer integration within complex fuselage shell

Georg Lonsdorfer, Composite Technology Center Stade GmbH (Stade)

11:55

Compression RTM – A new process for manufacturing high volume continuous fiber reinforced composites

Raman Chaudhari, Fraunhofer Institute for Chemical Technology ICT (Pfinztal)

12:20

High output automated process for large aircraft composite structures

Partrick Rousseau, Forest-Liné Capdenac SAS (Capdenac, France)

12:45

Continuous preforming technologies for curved CFRP profiles

Holger Purol, Faserinstitut Bremen e.V. (Bremen)

13:10 Summary/Closing Remarks

Evening Event 07 June 2011

Enjoy the evening in a relaxed atmosphere at the CFK-NORD research center. $20,000~\text{m}^2$ of research space, more than 100~highly qualified engineers, 10~institutions under one roof: These impressive figures describe the CFK NORD large-scale research center

During the evening event you will have the opportunity to make new business contacts as well as to strengthen old ones. Take advantage of the evening to continue earlier conversations from the first Convention day and socialize with fellow participants.

A shuttle service has been arranged to tranfser participants from the STADEUM to "CFK NORD" and then to indivdual hotels afterwards. Come join us!

CFK NORD

Ottenbecker Damm 12 21684 Stade 53° 34′ 26″ North 09° 30′ 26″ Fast





Location

Stade has a lot to offer. No wonder, with a history of over a thousand years! History that can be seen not only in museums, but also living history that can be experienced in the beautifully renovated old town. Stade, the town on the Schwinge, has continued to develop as a cultural center of the Elbe-Weser Triangle since the completion of the STADEUM culture and congress center in 1989. The secret of the avant-garde building's success is the effective synthesis of atmosphere, experience, organisation, and engineering.

STADEUM Kultur- und Tagungszentrum GmbH & Co. Betriebs KG

Schiffertorsstraße 6 21682 Stade www.stadeum.de



Hotels

Parkhotel Stade Hof

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Distance to Convention: 0.1 km starting from 95.– EUR Schiffertorsstr. 8 21682 Stade

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Oste-Hotel

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Exhibition

Space B

- 1 Airtech Europe Sarl
- 2 GKD-Gebr. Kufferath AG
- 3 Airbus Operations GmbH/CTC GmbH
- 4 Fraunhofer IFAM
- 5 fibretech-composites GmbH
- 6 Flow Europe GmbH
- 7 LAP GmbH Laser Applikationen
- 8 PRIVATE FACHHOCHSCHULE GÖTTINGEN
- German Aerospace Center, DLR e.V.
- 10 GMA-Werkstoffprüfung GmbH/GMA-Engineering GmbH
- 11 ESI Engineering System International GmbH
- 12 Dassault Systemes Deutschland GmbH
- 13 Olympus Deutschland GmbH, Inspection Maintenance Systems-IMS
- 14 Klenk GmbH & Co. KG
- 15 Forest-Line
- 16 AXSON GmbH
- 17 Toho Tenax Europe GmbH
- 18 M. Torres Deutschland GmbH
- 19 gwk Gesellschaft Wärme-Kältetechnik mbH
- 20 Fraunhofer IZFP
- 21 Evonik Röhm GmbH
- 22 CFK-Valley Stade e.V. Joint Booth

Space A

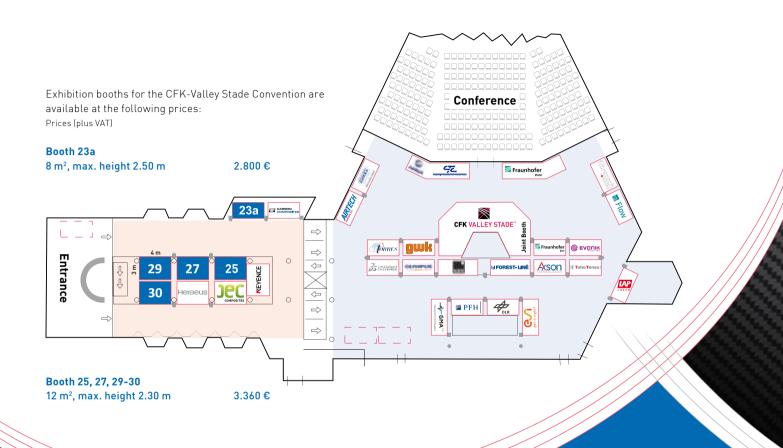
- 23b Carbon Composites e.V.
- 24 Keyence Deutschland GmbH
- 26 JEC Composites
- 28 Heraeus Noblelight GmbH

Additional Exhibition

- > Hansestadt Stade Wirtschaftsförderung
- > Innovatives Niedersachsen GmbH
- > Onyx composites
- > werkzwo GmbH

Matchmaking Event

> NBank / Enterprise Europe Network Niedersachsen



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Booth 2

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WORLD WIDE WEAVE

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Booth 4

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PRIVATE UNIVERSITY of Applied Sciences

Booth 9

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Booth 11

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Booth 20

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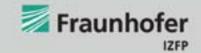
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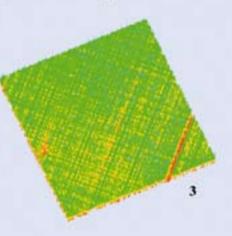




The Fraunhofer IZFP is engaged in research and development when quality assurance and/or proof of technical safety are required. The expertise comprises the physical fundamentals, sensor technologies, design of testing instruments, nano-analytics, system maintenance, staff training and services.

Offers for CFRP Applications

- Quality assurance of multiaxial raw carbon fiber materials
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Pictures:

- 1. IZFP-D Headquarters
- 2. Eddy Current Array
- 3. Visualization of EC Scan

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Matchmaking Event

The CFK Convention offers you for the first time the chance to meet potential business partners in pre-arranged meetings. This Matchmaking Event is the new meeting point to establish technology co-operations, partnerships for R&D and commercial agreements.

In order to take part in the event you just have to

- complete the registration form by providing a profile of your company/ your organisation
- browse the online catalogue to identify interesting profiles
- book one-to-one meetings with your preferred contacts and monitor the number of meetings organised for your company.

The event is organised by the Enterprise Europe Network of the NBank and is free of charges for participants of the CFK- Convention

The Enterprise Europe Network offers support and advice to businesses across Europe and helps them to make the most of the opportunities of the European Union. It is made up of close to 600 partner organisations in more than 40 countries, promoting competitiveness and innovation at the local level in Europe and beyond.

Registration: www.cfk-valley.com/matchmaking







Weitere Informationen bei:

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450 € plus VAT

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The fee includes conference, exhibition, conference proceedings, lunch, refreshments during breaks, evening event

The fee includes conference, exhibition, lunch, refreshments during breaks

Students

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[Please include copy of student I.D. with registration form]

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Legal Notice

You will receive an invoice for the participation fee upon receipt of your registration. The number of participants is limited due to organizational reasons. In justified cases, e. g. due to the cancellation of speakers or too few participants, we reserve the right to cancel the convention up to one week before the appointed day. The paid fees will be reimbursed in this case. Any further claims to CFK-Valley Stade Convention GbR will be excluded. With your signature, you consent that your data may be entered into the CFK-Valley Stade Convention GbR database. Your data will be treated confidentially and will not be disclosed to third parties.

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Deadline 21 May 2011

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☐ Student				
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