

6TH INTERNATIONAL

CFK-VALLEY STADE CONVENTION

“Productivity and Economic Efficiency”

12–13 June 2012, STADEUM Stade (Germany)

2012



Expert Conference on the Topic of
Composite Lightweight Constructions



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GREETINGS



CFK-Valley Stade has become one of the leading lightweight clusters in the periphery of the Airbus plant, which has been active in aircraft production for more than 35 years. This positive development is strategically significant for the state of Niedersachsen as a location for aerospace with approximately 30,000 employees working in this field.

There is a consensus between CFK-Valley and the state of Niedersachsen that the excellent material properties of CFRP can lead to decisive impetus that increase competition and optimize consumption in other important branches of industry as well. CFRP, for example, enables the production of more efficient XXL rotor blades for powerful wind turbines.

The specific material properties of CFRP pose considerable challenges for the manufacturing industry. Compared to metals, many processes, ranging from material processing and manufacturing technology to assembly, must be redefined. Manufacturing technologies in particular must be developed that allow for the reliable, automated manufacture of large structures in high quality and amount.

CFK NORD, the new research center in Stade, specializes in precisely this area. At this center, the large-scale research

establishments Fraunhofer IFAM, ZLP, DLR, and NTH work together with the industry on realizing these necessary innovations. CFK NORD is supported by the state of Niedersachsen with a budget of 70 million euros.

Recent results of a study carried out by a renowned consulting firm show that the production of carbon fiber-reinforced polymers will increase by about 20% per year by 2030. CFRP will increase in significance in the field of aviation. According to this forecast, the application of this material will also considerably increase in the automobile industry and in offshore/wind technology.

The mobility industry shapes the industrial and technological landscape of the state of Niedersachsen just as the topic of "wind power as an alternative form of energy" does. We want to maintain and further develop our leading position in Germany in all of these areas.

I wish all participants of the Convention a successful event, interesting conversations and a pleasant stay in Stade.

A handwritten signature in black ink, appearing to read 'Jörg Bode', written in a cursive style.

Jörg Bode

Minister for Economics, Labour and Transport
of Niedersachsen

GREETINGS



The key topic of this year's CFK-Valley Stade CONVENTION is "Productivity and Economic Efficiency". The specific requirements for the process design require a comprehensive approach to the value-added chain in order to establish stable and high-quality production processes.

A number of new things have happened at CFK-Valley in Stade since the last CONVENTION. The first robots for a fully automatic assembly of the Fraunhofer IFAM were installed at CFK NORD and the "BALU" autoclave of the DLR has begun operation. Also, the CFK-Valley Stade e.V. network has sustainably surpassed the mark of 100 members. In addition, new challenges, particularly those from automobile manufacture and the wind power industry, are bringing interesting topics into play.

The lectures at this year's CFK-Valley Stade CONVENTION specifically deal with the automatization of CFRP. Progress in the area of process technology is particularly interesting with regard to the aircraft and automobile industries. The core objective is always the acceleration of the complicated handling and the shortening of the curing time of the material in the production process. Here it is important to establish stable processes for production batches of more than 100,000 pieces per

year. From the application of innovative multi-material systems to the topic of repairing CFRP structures, the 6th CFK-Valley Stade CONVENTION offers you a broad spectrum of interesting lectures and presentations.

The contributions of the speakers will once again provide the basis for in-depth discussions during the exhibition. Like last year, one part of the CONVENTION will be the presentation of new items on the topic of CFRP at the exhibition of more than 40 companies and research establishments. Interest in this year's CONVENTION was enormous at the forefront, just as it was last year – a sure sign that we are operating in a highly dynamic growth market.

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

A handwritten signature in black ink, appearing to read "A. Herrmann".

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 sixth 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 **27 April 2012**.

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





10:00

Opening speech from CFK-Valley Stade Convention GbR and the Company Partners, CFK-Valley Stade e.V. & innos - Sperlich GmbH
Prof. Dr.-Ing. Axel Herrmann, Chairman Steering Board CFK-Valley Stade e.V. (Stade)

Greetings

Silvia Nieber, Mayoress of the City of Stade (Stade)

10:15

"The (Textile) Empire Strikes Back" - from airplane construction in the past to carbon fabrics for composites in the future
Peter D. Dornier, Lindauer DORNIER GmbH (Lindau/Bodensee)

10:30 Coffee Break & Exhibition

SESSION: APPLICATIONS



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



11:30

Automotive prospective on the application of carbon fibre
Dr. Armin Plath, Volkswagen AG (Wolfsburg)

11:55

CAMISMA: Carbon/Amide/Metal based Interior Structure with Multi material system Approach
Axel Köver/Dr. Ulrich Riedel, Johnson Controls GmbH (Burscheid)

12:20

Serial production of structural CFRP parts for the aerospace industry
Dr. Bernd Hirshammer, HDE Consult GmbH (Stade)/Dr. Holger Purool, xperion Aerospace GmbH (Immenstaad)

12:45 Lunch Break & Exhibition

SESSION: PRODUCTION TECHNOLOGY



Chairman:
Dr.-Ing. Martin Röhrig,
Composite Technology
Center Stade GmbH [Stade]



14:15

Recent advances in robotic automated deposition of different materials

Niko Naumann, Coriolis Composites GmbH [Augsburg]

14:40

The use of infrared heating for the production of fiber reinforced polymers

Dr. Lotta Gaab, Heraeus Noblelight GmbH [Kleinostheim]

15:05

Resin transfer prepregging - process chain for large scale production of structural composite parts

Marc Linus Fecher, RWTH Aachen University - Institute of Plastics Processing in Industry and the Skilled Crafts [Aachen]

15:30

Continuous composite fuselage panel production – a progressive approach for future aircraft structures

Joachim Piepenbrock, Composite Technology Center Stade GmbH [Stade]/
Jan Verhaeghe, ACROSOMA NV [Gent Area, Belgium]

15:55 Coffee Break & Exhibition

SESSION: SIMULATION



Chairman:
Prof. Dr. Richard
Degenhardt, German
Aerospace Center, DLR
(Brunswick)



16:55

Simulation-based optimization of the manufacturing process for a composite marine propeller

Dr.-Ing. Hannes Kroeger, Voith Turbo Advanced Propeller Technologies GmbH & Co. KG (Rostock)

17:20

Potentials of novel FE simulation techniques for the machining of CFRP and composite materials

Dr.-Ing. Kay Marschalkowski, ISBE GmbH - Tool Engineering Center (Unna)

17:45

Digitized process chains - quality based production of large CFRP components

Sebastian Rosskamp, German Aerospace Center, DLR - Institute of Composite Structures and Adaptive Systems (Stade)

18:30 EVENING EVENT

Location: Gut Deinster Mühle

A shuttle service will bring all participants from the STADEUM directly to the manor and back to the hotels later in the evening.

EVENING EVENT 12 JUNE 2012

All participants are warmly welcome to the „Gut Deinster Mühle“ in Deinste as a special way of concluding the first day of the Convention. Relax and unwind together with the speakers, exhibitors and participants at this 800-year-old manor and savor the summer atmosphere of a grill buffet with jazz music in the background.

Enjoy the fascinating contrast of the traditional and modern world and take advantage of the opportunity for more in-depth conversations on your first day of the Convention in a relaxed atmosphere such as in the traditional manor stables.

Highlight of the evening will be the bestowal of the “Composite Innovations Award” 2012.

A shuttle service will bring you from the STADEUM directly to the manor and back to the hotels later in the evening.

Come join us!

Location: Gut Deinster Mühle - www.allesistgdm.de





09:15

Greetings

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

SESSION: MATERIALS



Chairman:
Dr. Dirk Niermann,
Fraunhofer Institute
IFAM (Stade)



09:30

Lightweight aircraft components in multi-material design for small series production

Prof. Dr.-Ing. habil. Prof. E.h. Dr. h.c. Werner Hufenbach/Dr.-Ing. Andreas Ulbricht, TU Dresden -
Institute of Lightweight Engineering and Polymer Technology (Dresden)

09:55

Wind rotorblade manufacturing - stepchanges by new resins and release foils

Dr. Bernd Hoevel, Dow Deutschland Anlagengesellschaft mbH (Mietingen-Baltringen)

10:20

Performance of recycled carbon fibre materials with examples of potential applications

Tim Rademacker, carboNXT GmbH (Wischhafen)

10:45 Coffee Break & Exhibition

SESSION: POST PROCESSING



Chairman:
Jürgen Richter,
Premium AEROTEC
GmbH (Varel)



11:30

High-speed spot welding of continuous fibre reinforced thermoplastic composites

Irene Fernandez Villegas, Delft University of Technology - Design and Production of Composite Structures (Delft, The Netherlands)

11:55

Adaptive machining for efficient manufacture and repair of CFRP components

Dr. Claus Bremer, BCT GmbH (Dortmund)

12:20

Automised assembly of CFRP Structures

Dr. Patryk Burka/Gregor Graßl, Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM (Stade)

12:45

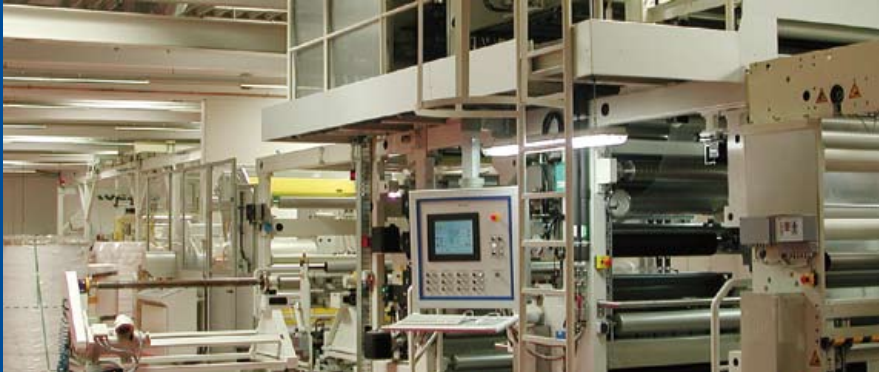
Laser in Black: potentials of lasers within CFRP production

Dr.-Ing. Dirk Herzog, LZN Laser Zentrum Nord GmbH (Hamburg)/
Malte Scherner, Kämmerer GmbH Engineering (Hamburg)

13:10 SUMMARY/CLOSING REMARKS

Machines for Prepreg Production

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Aerospace



Wind Energy Plants



Ship-building



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HOTELS

We offer all participants a hotel room contingent at special rates until **May, 08 2012**. Please, book under the **keyword "CFK"**.

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HOTEL AM HOLZHAFEN

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starting from 69.– EUR**

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www.hotel-in-stade.de

AKZENT HOTEL „ZUR EINKEHR“

**Distance to Convention: 1.6 km
starting from 72.– EUR**

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starting from 69.– EUR**

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www.hotel-vierlinden.de

RAMADA HOTEL "HERZOG WIDUKIND"

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starting from 90.– EUR**

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GOLF-HOTEL „GUT DEINSTER MÜHLE“

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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.stadium.de

A photograph of an exhibition booth. The booth has a large white circular sign with the text 'The Expert Forum for Composite Lightweight Construction'. The background is red and features images of composite structures. A person is visible in the foreground, and another person is partially visible in the background.

The Expert Forum for
Composite Lightweight
Construction

EXHIBITION

Space B

- 1 Airtech Europe Sarl
- 2 GKD-Gebr. Kufferath AG
- 3 Airbus Operations GmbH/CTC GmbH
- 4 Fraunhofer IFAM
- 5 Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren IZFP
- 6 Flow Europe GmbH
- 7 LAP GmbH Laser Applikationen
- 8 PRIVATE HOCHSCHULE GÖTTINGEN
- 9 DE-STA-CO Europe GmbH
- 10 GMA-Werkstoffprüfung GmbH/GMA-Engineering GmbH
- 11 ESI Engineering System International GmbH
- 12 KauPo Plankenhorn e.K.
- 13 Heraeus Noblelight GmbH
- 14 Klenk GmbH & Co. KG
- 15 DLR - Institut für Faserverbundleichtbau und Adaptronik
- 16 Toho Tenax Europe GmbH
- 17 AXSON GmbH
- 18 M. Torres Deutschland GmbH
- 19 MAPAL Präzisionswerkzeuge Dr. Kress KG
- 20 Coriolis Composites GmbH
- 21 Evonik Industries AG

- 22 CFK-Valley Stade e.V. - Joint Booth
 - > Acrosoma NV
 - > CGTech Deutschland GmbH
 - > BRÖTJE-Automation GmbH
 - > BCT GmbH
 - > Bolle & Cords Elektrotechnik GmbH
 - > Hufschmied Zerspanungssysteme GmbH
 - > KUKA Systems GmbH
 - > Premium AEROTEC GmbH
 - > MET Motoren- und Energietechnik GmbH

Space A

- 26 JEC SAS

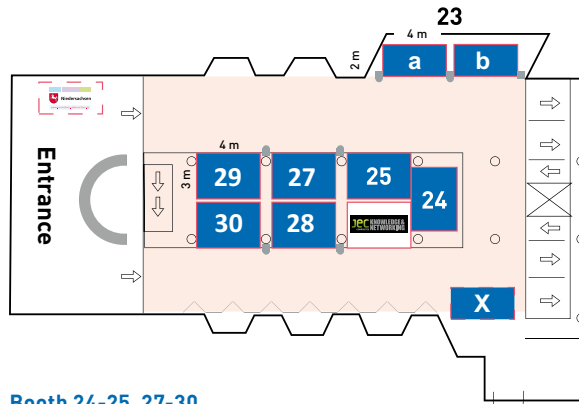
Additional Exhibition

- > Hansestadt Stade - Wirtschaftsförderung
- > Innovatives Niedersachsen GmbH

Exhibition booths for the CFK-Valley Stade Convention are available at the following prices:
Prices (plus VAT)

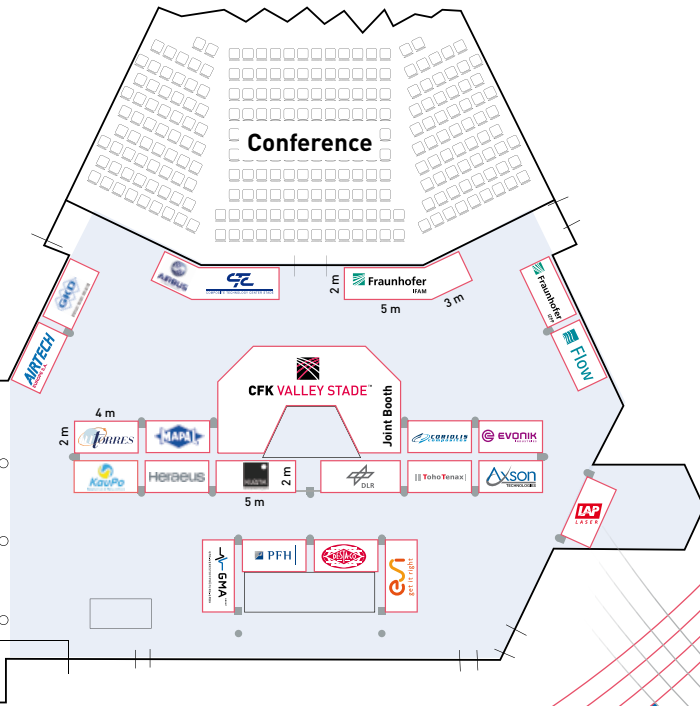
Booth 23

a or b: 8 m², max. height 2.50 m 2.240 €
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Booth 24-25, 27-30
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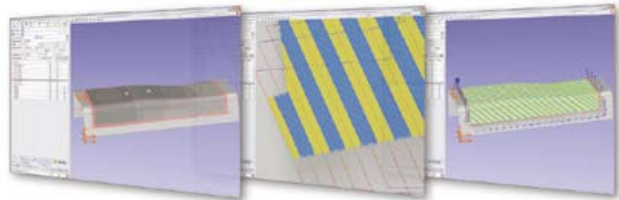
Booth X
8 m², max height 2.50 m on Request



Last Chance

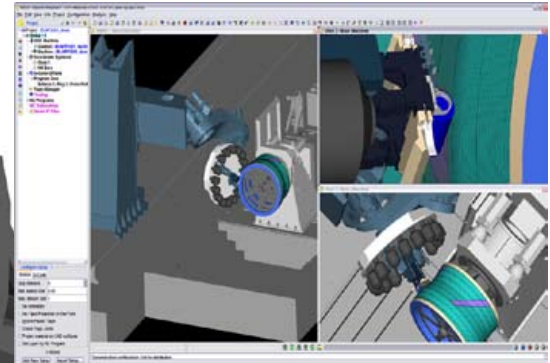
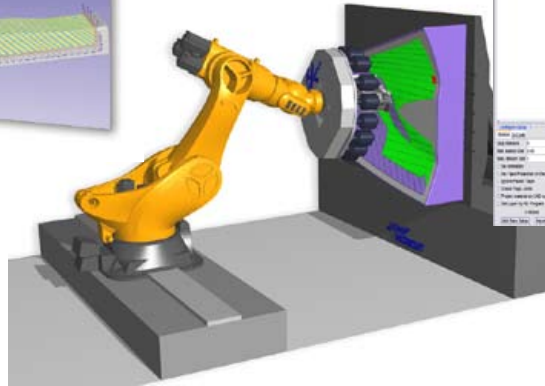
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Booth 5

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Booth 11

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Phone +49 7424 95842-3
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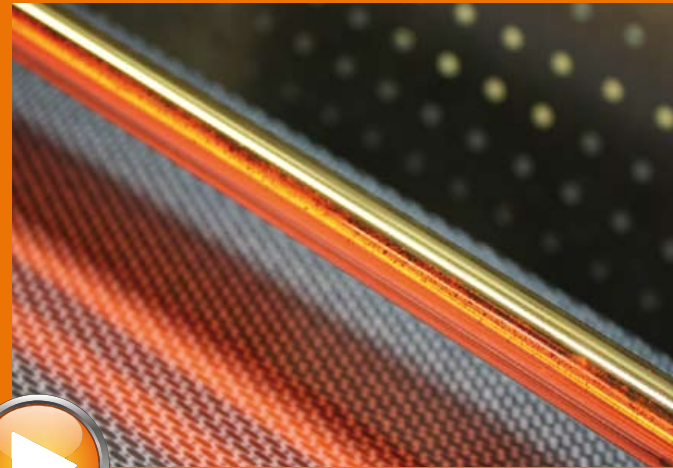


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stefanie.dempff@klenk-tools.de
www.klenk-tools.de

Booth 15

DLR - Institut für Faserver- bündelichtbau und Adaptronik

Lilienthalplatz 7
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jana.hoidis@dlr.de
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ballin@axson.de
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Booth 18

M. Torres Deutschland GmbH

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Booth 19

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Elektrotechnik GmbH



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eberhard.goette@broetje-automation.de
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The background of the slide features a musical score with various notes and a red airplane icon flying across the staves. The text 'BRÖTJE AUTOMATION' is positioned in the top right corner, with 'BRÖTJE' in a larger, bold font above 'AUTOMATION'.

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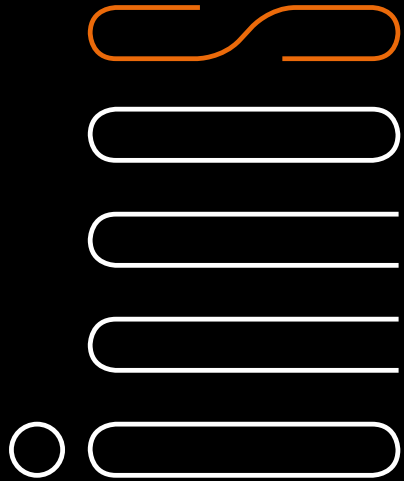
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wirtschaftsfoerderung@stadt-stade.de
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FEES

Participants **600 € plus VAT**
Every additional person **450 € plus VAT**
(will be checked upon registration)

Participants **450 € plus VAT**
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Participants **450 € plus VAT**
(Member of DGLR e.V.)

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

Students **80 € plus VAT**
(Please include copy of student I.D. with registration form)

The fee includes conference, exhibition, lunch, refreshments during breaks (without conference proceedings)

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. Any cancellation of participant registration received after 01 June 2012 will require full payment (100%) of the participation fee. A legally valid cancellation (as participant) must be submitted in writing. The undersigned/participant furthermore agrees that photos and film material concerning him or her may be produced and published and that photos of him or her may be published (in further print publications). 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.

Organization

Main Office
CFK-Valley Stade Convention GbR

c/o CFK-Valley Stade e. V.
Ottenbecker Damm 12
21684 Stade (Germany)

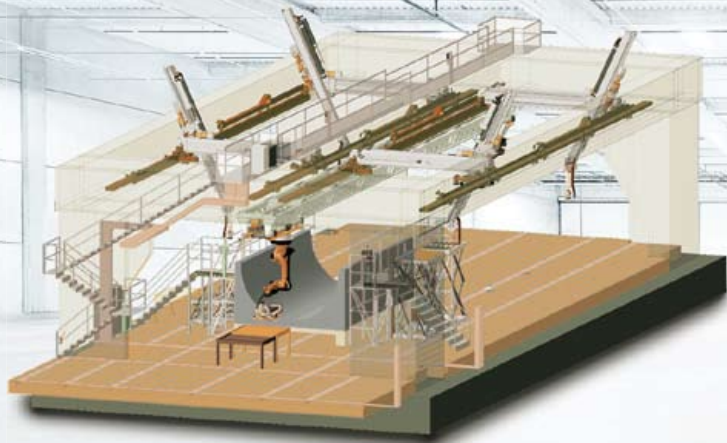
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REGISTRATION

Via fax to **+49 551 49601-49**
or via E-Mail: **info@cfk-convention.com**

Last name / first name / title

Company / organisation

Position / department

Street / P.O. box

Postal code / town / country

Phone / fax

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Deadline 25 May 2012

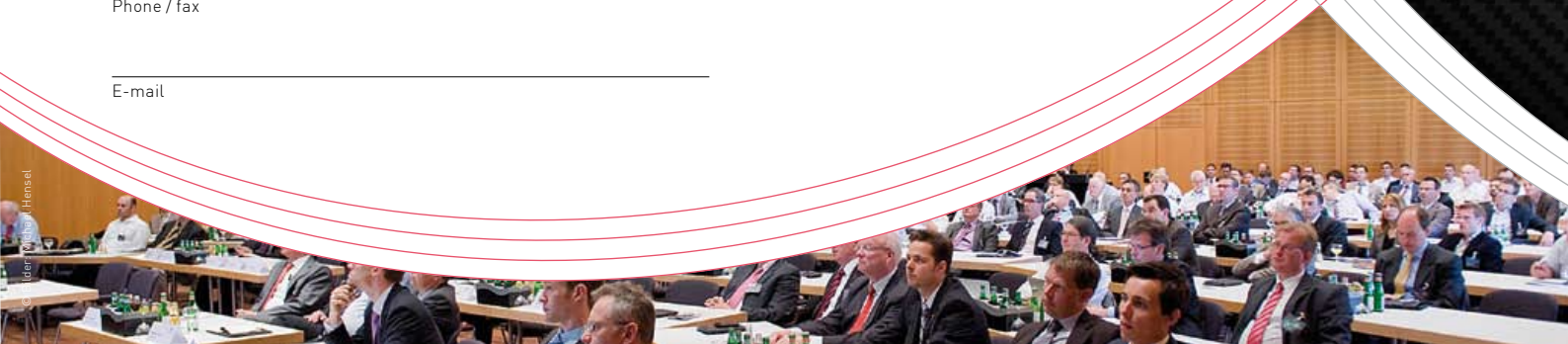
Binding registration (please check appropriate item):

- Member of CFK-Valley Stade e.V./DGLR e.V.
- Non-Member
- Student

Date

Signature*

Registration also possible:
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