



**Location: Kongress- und Tagungszentrum FILDERHALLE**

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## WEDNESDAY 15 NOVEMBER 2017

**08.00 - 09.00 Registration and coffee**

**09.00 - 09.15 Opening**

- 09.00 - 09.10 - Welcome by Prof. Dr. Frank Henning, Chairman of SAMPE Germany
- 09.10 - 09.15 - Opening by Prof. Dr. Jyrki Vuorinen, President of SAMPE Europe

**09.15 - 10.15 Plenary Session Keynote speakers**

*Wet compression moulding – from structural to exterior parts*  
by Dr. Gunnar Rieber, BMW Group, DE

09.45 - 10.15 *More mobility for composite aircraft*  
by Dr. Christian Sauer, Lufthansa Technik, DE



Dr. Gunnar Rieber Dr. Christian Sauer

**10.15 - 10.45 Coffee Break**

### GROSSER SAAL

#### AUTOMOTIVE

**10:45 - 12:30**

#### Automotive composites

**Prof. Dr. Frank Henning, Fraunhofer ICT, DE**

- *Next generation intermediate material for automobile* - Ichiro Taketa, Toray Carbon Fibers Europe, FR
- *Investigations on friction behaviour and forming simulation of plain woven fabrics for wet compression moulding* - Fabian Albrecht, Karlsruhe Institute of Technology, DE
- *Processing of continuous-discontinuous-fiber-reinforced thermosets* - David Bücheler, Fraunhofer ICT, DE
- *Materials and process development for high rate manufacturing of a carbon fibre composite automotive floor* - Andrew R. Mills, Cranfield Composites Centre, UK
- *New tech center in Asia with thermoset and thermoplastic technology* - Jordi Aránega MBA, Hengrui Corporation, CN

### KLEINER SAAL

#### AEROSPACE

#### Aerospace composites

**Philippe Briant, Ariane Group, FR**

- *Are we being innovative enough with composites?* - Alison J. McMillan, WOT-I, UK
- *Surface treatment of carbon fibers: influence on fiber-matrix adhesion in carbon fiber reinforced polymers* - Judith Moosburger-Will, University of Augsburg, DE
- *Induction welded thermoplastic overhang panel* - Jeroen de Vries, KVE Composite Structures, NL
- *Overmoulding technology for aerospace structural parts* - Stuart Green, Victrex, UK
- *Carbon fibre reinforced plastics for high performance applications* - Julian Lowe, Toho Tenax Europe, DE

### STUDIO 1

#### MATERIALS & PROCESSES

#### Automation

**Dr. Tjark von Reden, Gesamtleitung, MAI Carbon Cluster Management, DE**

- *Cost-efficient manufacturing of quality assured hybrid CFRP/GFRP-parts* - Nadine Magura, RWTH Aachen, DE
- *Detection of surface defects on carbon fiber rovings using line sensors and image processing algorithms* - Andreas Margraf, Fraunhofer IGCV, DE
- *Inprocess quality control for automated fiber lay-up* - Katharina Schlegel, Airbus, DE
- *New solutions in automation for small to medium size parts, in low volume series* - Marcus Kremers, Airborne, NL
- *Developing a cost comparison technique for hand layup versus automated fibre placement, and infusion versus out-of-autoclave* - Laura Veldenz, National Composites Centre, UK

### STUDIO 2

#### SPECIAL APPLICATIONS

#### Textech

**Prof. Dr.-Ing. Götz T. Gresser, DITF Denkendorf, DE**

- *High performance 3D woven* - Christopher U. Silva, M Wright & Sons, UK
- *The impact of lattice structure and pore geometry on the mechanical properties of carbon fibres studied by Raman spectroscopy, WAXS and SAXS techniques* - Muhannad Al Aiti, TU Dresden, DE
- *Cost-efficient flat-knitted 3D net-shaped preforms for composite applications* - Quentin Bollengier, TU Dresden, DE
- *Robot-based implant resistance welding of carbon fiber reinforced thermoplastics* - Lars Brandt, German Aerospace Center, DE
- *Automated finishing of braided preform ends* - Marion Lütz, DITF Denkendorf, DE

**12.30 - 14.00 Lunch & Poster presentations SAMPE Conference & Students Symposium**

**14.00 - 14.40**

**Start-Ups presentation Baden Württemberg.**  
Moderator Dr. Wolfgang Seeliger, Leichtbau BW, DE

**14.40 - 19.00 5 Excursions in STUTTGART Area**



- **AUDI** Neckarsulm Lightweight Technology Center
- **PORSCHE** Stuttgart, Production Plant & Museum
- **TRUMPF** Ditzingen, HQ & Training Centre Machine Tools and Laser Technology
- **DITF** Denkendorf, Europe's largest Textile Research Center
- **Fraunhofer ICT** Pfinztal, R&D Institute for composites and applications

**19.00 - 22.00 Happy Hour and Networking Dinner, in the Filderhalle**

## THURSDAY 16 NOVEMBER 2017

**08.00 - 09.00 Registration & coffee**

### GROSSER SAAL

#### AUTOMOTIVE/AEROSPACE

**09.00 - 10.30**

#### Automotive & Aerospace composites thermoplastics

**Sebastiaan Wijskamp, TPRC, NL**

- *Challenges in stamp forming tailored blanks* - Tjitse K. Slanage, University of Twente, NL
- *Continuous ultrasonic tacking and real-time verification; breakthrough in effective tape laying and fiber placement* - Arnt Offringa, GKN Fokker, NL & Jeroen Oosterhof, BOIKON, NL
- *First ply tack of an automated fibre placement process – influence of heatable mould surface, release films and process parameters* - Chinh D. Nguyen, German Aerospace Center, DE
- *Processing of thermoplastic composites; Developments & Future challenges* - Hans Luinge, TenCate, NL

### KLEINER SAAL

#### AEROSPACE

#### Hybrid and sandwich composites 1

**Leo Muijs, GKN Fokker Aerostructures, NL**

- *Product and process development of a hybrid stiffening structure for aerospace application* - Tobias Joppich, Fraunhofer ICT, DE
- *Manufacturing of preforms for multifunctional steel/carbon hybrid fiber reinforced polymer composites by optimized dry fiber placement process* - Florian Kühn, IVW, Kaiserslautern, DE
- *One-shot physically foamed sandwich-structures with carbon-fibre-reinforced top layers* - Jan Luft, TU Dresden, DE
- *Failure mode based design and dimensioning method for metal-composite-structures* - Albert Langkamp, TU Dresden, DE

### STUDIO 1

#### SPECIAL APPLICATIONS

#### Energy applications (wind, tidal, oil & gas)

**Marcus Kremers, Airborne, NL**

- *Low temperature behavior of uhmwpe endumax® tapes* - Bilim Atli-Veltin, TNO, NL
- *Process simulations for manufacturing thick-section parts with low-cost fibre reinforced polymers* - James M. Maguire, University of Edinburgh, UK
- *Improvement of productivity and quality in the wind energy industry through the use of an advanced sensor system* - Nikolaos Pantelidis, Synthesites SNC, Belgium
- *Experimental approach for determining the glass/epoxy interfacial properties through fibre fragmentation tests* - Sibrand Raijmaekers, Knowledge Centre WMC, NL

### STUDIO 2

#### MATERIALS & PROCESSES

#### Joining and Bonding

**Dr. Henrik Schmutzler, MBA Lufthansa Technik, DE**

- *Ytterbium Fibre laser surface pre-treatment of CFRP soft patch repairs* - Sergej Harder, TU Hamburg, DE
- *Hybrid thermoset/thermoplastic composites by using combination technologies including injection moulding* - Stefan Schmitt and Richard Schares, RWTH Aachen, DE
- *The effect of a nanoscale surface structure on the interfacial strength of injection molded pps-metal hybrids* - Marcel Laux, Fraunhofer ICT, DE
- *Development of a thermal process model for the homogenization of laser-based surface activation of CFRP* - Philipp Hergoss, LZN Laser Zentrum Nord, DE

**10.30 - 11.00 Coffee Break**

### GROSSER SAAL

#### AUTOMOTIVE

**11.00 - 12.30**

#### Automotive composites thermoplastics, Process

**Sebastiaan Wijskamp, TPRC, NL**

- *New benchmark in the tailored blank manufacturing – high volume production in an exceptional quality* - Matthias Graf, Dieffenbacher Maschinen- und Anlagenbau, DE

### KLEINER SAAL

#### AUTOMOTIVE/AEROSPACE

#### Hybrid and sandwich composites 2

**Dr. Bilim Atli-Veltin, TNO, NL**

- *Mechanical performance of curved sandwich foldcores* - Fabian Muhs, Stuttgart University, DE
- *Composite high pressure hydrogen gas vessel of type-iv embedded with clay crystal layer as gas barrier* - Koichi Yonemoto, Kyushu Institute of Technology, JP

### STUDIO 1

#### SPECIAL APPLICATIONS

#### Sports & Leisure

**Scott Beckwith, BTG, USA**

- *Tailored Sports Equipment Using AM Tooling – A Case Study* - Kim-Niklas Antin, Aalto University, FI
- *Towards the first composite bicycle safety standard* - Adam Wais, Rolo Bikes of Rolo-Vandelay Industries, SE

### STUDIO 2

#### MATERIALS & PROCESSES

#### Design & Modeling

**Dr. Christian-André Keun, CompriseTec, DE**

- *Local buckling of composite laminated beams accounting for transverse shear deformations* - C. Mittelstedt, TU Darmstadt, DE
- *Design for manufacturing of vibro-acoustic metamaterials for low frequent NVH insulation* - C. Claeys, KU Leuven, BE



## GROSSER SAAL

### AUTOMOTIVE

- *Integration of endless fibres in the injection moulding process* - Tobias Gebken, TU Braunschweig, DE
- *Continuous data measurement and analysis in automated manufacturing processes for hybrid lightweight structures* - Daniel Haider, TU Dresden, DE
- *Confidence in predictive engineering for overmoulded continuous fibre composites* - Warden Schijve, SABIC, NL

## KLEINER SAAL

### AUTOMOTIVE/AEROSPACE

- *Using finite element method for the sizing of hybrid sheet moulding compounds* - H. Büttemeyer, Faserinstitut Bremen, DE
- *The local metal hybridisation: exploitation of the weight saving potential* - E. Petersen, German Aerospace Center, DE
- *VESTAMELT® Hylink – the key to innovative hybrid components in mass production and small series* - Martin Risthaus, Evonik, DE

## STUDIO 1

### SPECIAL APPLICATIONS

- *Using failure analysis techniques to improve production of composite parts* - Scott Ganaja, Pro-Gressiv Engineering, USA
- *Manufacturing and design defects in sporting goods: Why they occur and how to avoid them* - Scott Beckwith, BTG Composites, USA

## STUDIO 2

### MATERIALS & PROCESSES

- *Design Guidelines 2.0 to support design process of fibre-reinforced plastics* - Viktoriia Butenko, IPEK, DE
- *Modeling the microstructure of complex shaped multilayer reinforced composite products* - E. Lamers, Reden, NL

## 12.30 - 13.30 Lunch & Poster presentations SAMPE Conference & Students Symposium

### 13.30 - 13.50 Presentation 2 winners student competition SAMPE Germany

- *Development of an impregnation and die unit for the fabrication of thermoplastic fiber-reinforced profiles via the reactive pultrusion process* - Martin Schäkel, Fraunhofer IPT, DE
- *Mold filling simulation for production design of a CFRP car underbody structure with resin-transfer-molding* - Simon Werner, IKT, DE

## GROSSER SAAL

### AUTOMOTIVE

### 13.50 - 15.30

### Automotive composites thermosets & RTM

**Bart Vangrimde, Huntsman Polyurethanes, BE**



- **KEYNOTE:** *Research Project SMiLE – Manufacturing technologies for continuous fibre-reinforced lightweight automotive floor modules for cost-efficient high volume production* - Günter Deinzer, AUDI, DE

- *T-RTM components from caprolactam – performance characteristics, processing aspects and in-line testing employing active thermography* - Norbert Müller, Philipp Seinsche ENGEL AUSTRIA, AT

- *Development of a supersport car aerodynamic component made of short fiber CFRP, characterized by high integration level of parts* - Andrea Aguggiaro, Automobili Lamborghini, IT

- *Automating resin transfer moulding* - Cristian Lira, National Composites Centre, UK

- *Tough polyurethane snap cure resins engineered for automotive composite applications* - Bart Vangrimde, Huntsman Polyurethanes, BE

## KLEINER SAAL

### AEROSPACE

### Manufacturing in Aerospace

**Prof. Dr.-Ing. Peter Middendorf, Stuttgart University, DE**



- **KEYNOTE:** *Industrial vision of a full TP welded primary airframe structure* - Loic Le Lay, Stelia Aerospace, FR

- *Process analysis and development of a module for implementing continuous fibres in an additive manufacturing process* - Florian Baumann, KIT, DE

- *Mechanics of cellular solids and lattices and their lightweight potential in additive manufacturing* - Alexander Großmann, TU Darmstadt, DE

- *A+ glide forming/the new automated & continuous manufacturing process* - Jordi Brufau Redondo, Applus Laboratories, SP

- *Industrial concept for the automated production of small batch series preforms for Carbon Fiber Reinforced Plastic (CFRP) components* - Dominik Deden, German Aerospace Center, DE

## STUDIO 1

### SPECIAL APPLICATIONS

### Architecture and Infrastructure

**Andrew R. Mills, Cranfield Composites Centre, UK**



- **KEYNOTE:** *New challenges for Composites in Building & Construction* - Jan Knippers, Institute of Building Structures and Structural Design, University of Stuttgart, DE

- *Fully bio-based composite pedestrian bridge: design, production, and monitoring* - G. Luyckx, Com&Sens, BE

- *Experimental investigation of failure modes of lattice grid composites for building structures* - Valentin Koslowski, ITKE Stuttgart, DE

- *Flexural response of corroded polymer modified reinforced concrete beams* - Nabil M. Al-Akhras, Jordan University of Science & Technology, JO

- *Staatsoper Unter den Linden – Berlin, Robot-produced reverberation gallery made of technical ceramics* - Matthias Oppe, Knippers Helbig Advanced Engineering, DE

## STUDIO 2

### MATERIALS & PROCESSES

### Testing

**Dr. Natalia Becerra Pozo, Exova, UK**



- **KEYNOTE:** *A novel testing method of interfacial shear strength between fiber and resin filled in pinhole* - Kazuro Kageyama, University of Tokyo, JP

- *Accelerated residual strength after fatigue testing using in-situ image processing for damage detection* - Miloš Drašković, University of Stuttgart, DE

- *Automated high-throughput microbond tester for interfacial shear strength studies* - Mathias von Essen, Tampere University of Technology, FI

- *Application of CT micro-focus imaging to assess manufacturing and design defects in composite sporting goods* - Scott Beckwith, BTG Composites, USA

- *Tensile testing of biaxially braided carbon composites* - Daniel Michaelis, Stuttgart University, DE

## 15.30 - 16.00 Tea break

## GROSSER SAAL

### AUTOMOTIVE

### 16.00 - 17.00

### Automotive composites thermoplastics, Properties

**Prof. Luigi Torre, University of Perugia, IT**

- *Effects of blank quality on press formed pekk/carbon composite parts* - Alfonso Maffezzoli, University of Salento, IT

- *Influence of low shear mixing settings on the mechanical properties of long glass fibre polypropylene* - Thomas A. de Bruijn, Saxion University, NL

- *Pre-standardization study on mechanical property tests for carbon/thermoplastic composites* - Kazuro Kageyama, The University of Tokyo, JP

## KLEINER SAAL

### AEROSPACE

### Space applications

**Dr. Javad Fatemi, Airbus Defence & Space, NL**

- *Access to space: ArianeGroup's vision of development of technologies for new launchers* - Patrick Peres, Ariane Group, FR

- *Structural testing of a full scale booster casing produced in vacuum resin infusion technology* - Ralf Hartmond, MT Aerospace, DE

- *Integrated CFRP cost effective structures* - Carlos B. Mangas, Airbus Defence and Space, SP

## STUDIO 1

### SPECIAL APPLICATIONS

### Sustainable Composites

**Prof. Dr. ir. Aart W. van Vuure, KU Leuven, BE**

- *Industrial manufacturing of hybrid yarns made of recycled carbon fibres for thermoplastic composites* - Martin Hengstermann, TU Dresden, DE

- *Cost-effective manufacturing of natural fiber textile composites for semi-structural applications by direct thermoplastic melt impregnation* - Chung-Hae Park, IMT Lille Douai, FR

- *Perspectives of web based composites from RCF material* - Georg Stegshuster, ITA Augsburg, DE

## STUDIO 2

### MATERIALS & PROCESSES

### Fibers and textile composites, Draping and Preforming

**Dr Amooi Raina, RWTH Aachen, DE**

- *Innovative textile technologies for the waste-free production of complex net-shape 3d reinforcing structures for composites* - Wolfgang Trümper, TU Dresden, DE

- *Comparison of fibre angles between mechanical draped carbon fibres and draping simulation* - Christoph Frommel, German Aerospace Center, DE

- *Tailored preform production with customizable UD materials for hybrid material design* - Florian Helber, Stuttgart University, DE

## 17.00 - 17.30 Closing & Farewell

## POSTER PRESENTATIONS

*Automated layout of spherical glare components using cooperating robots* - Dominik Deden, German Aerospace Center, DE

*Online intelligent cure monitoring for aerospace applications* - Philipp Zapp, German Aerospace Center, DE

*Potentials of load carrying, structural integrated conductor tracks* - A. Pototzky, German Aerospace Center, DE

*Investigation of a methodological approach to modelling sandwich structures using cohesive elements* - Thomas Grünheid, German Aerospace Center, DE

*Drape forming methods for the automated preforming of composite helicopter structures* - Thomas Stefani, German Aerospace Center, DE

*Sensor-supported gripper surfaces for optical monitoring of draping processes* - M. Körber, German Aerospace Center (DLR), DE

*Concept of a new led based heating unit for automated fiber placement* - Tilman Orth, Airbus Defence and Space, DE

*New multi-substrate polyurethane adhesives high performance bonding technologies for automotive lightweight designs* - Nicole Schlingloff, Henkel, DE

*Multi axial fatigue design of laser welded plastic parts* - Dominik Spancken, Fraunhofer LBF, DE

*Fire properties of commingled glass fiber reinforced Polypropylene: an initial investigation* - Yousof M. Ghazzawi, University of Queensland, AU

*Meso- and macro-scale models for the simulation of 3D woven composite reinforcement mechanics* - Thomas Gereke, TU Dresden, DE

*Characterization of the interlaminar shear strength of fiber metal laminates with reactively processed thermoplastic matrix* - H. Werner, Karlsruhe Institute of Technology (KIT), DE

*Development of a dielectric sensor for the flow monitoring of resin transfer moulding* - Athanasios Pouchias, Loughborough University, UK

*Compatibility between two polymeric binders and impregnation resins for use in the insulation system of superconducting coils* - Beatriz Del Valle Grande, European Organization for Nuclear Research (CERN), CH

*Infusion characteristics of preforms manufactured by automated dry fibre placement* - Laura Veldenz, National Composites Centre, UK

*Forming behaviour and achievable part quality of thermosetting apf-to-preg-laminates* - Alexander Schug, Fraunhofer IGCV, DE

*Experimental analysis of consolidation processes for preforms manufactured by thermoplastic automated fiber placement* - Thomas Zenker, Fraunhofer IGCV, DE

*Development of a transmission housing using CFRP-TP* - Monika Kreutzmann, ARRK/P+Z Engineering, DE

*Stylight®: a new generation of aesthetic composites based on styrenic co-polymers* - Philipp Deitmerg, INEOS Styrolution, DE

*Damage behavior of inserts embedded in carbon fiber reinforced plastics under near-service loads* - Florentin Pottmeyer, Karlsruhe Institute of Technology (KIT), DE

*Cost-effective sandwich cores for aircraft cabin applications* - Florian Hesselbach, Diehl Aircabin, DE

*Wrinkling failure of membrane composite of varying orientations under in-plane shear* - Farhad Sabri, Australian college of Kuwait, KW

*Fracture and Fatigue Behaviour of Carbon Fibre Composites with Nanoparticle-Sized Fibres* - Shang-Nan Tsai, Imperial College London, UK

*Improving fracture toughness and fatigue performance of GFRP using nanosilica in fiber sizing* - Sathis Kumar Selvarayan, DITF Denkerdorf, DE

*Optimization of the tow spreading process by design of experiments* - Haseeb Akram, DITF Denkerdorf, DE

*Effects of geometry and fibre reinforcement of soft elastomeric actuators on the actuation performance: the search of new applications* - Jyrki Vuorinen, Tampere University of Technology, FI

*Thermal, electrical and mechanical properties of a graphit filled high Tg epoxy system* - Simon Bard, University of Bayreuth, DE

*Hybrid nanofillers for multifunctional properties in high performance composites* - Ranji Vaidyanathan, Oklahoma State University

*Testing of novel joining concepts for improved load application into oscillation-loaded fibre-reinforced plastic structures* - Sebastian Wagner, Natural and Medical Sciences Institute (NMI), DE

*Continuous assessment of geometrical properties from unidirectional fiber reinforced tapes* - Clemens Buschhoff, Fraunhofer IPT, DE