



Date: 15 - 17 November 2022
Location: Handelskammer Hamburg – Germany

TUESDAY 15 NOVEMBER

PRE-CONFERENCE TUTORIAL on REPAIR

13.30 **Entrance Handelskammer Hamburg**
Registration Tutorial

14.00 – 17.00 **Alber-Schäfer-Saal - 1st Floor**
Session chair: Henrik Schmutzler, Lufthansa Technik, Germany
5 Presentations:

- 1 Challenges in Composite Training and Repair by Andreas Meyer – Lufthansa Technical Training
- 2 Fuselage and wings by Thomas Kruse-Strack – Airbus Operations
- 3 Helicopter (Rotor and/or doors) by Hannes Schmid – Airbus Helicopters
- 4 Defence by Dr. Thomas Körwien – Airbus Defence and Space
- 5 Structures by Henrik Schmutzler – Lufthansa Technik

Length of presentations 30 min. Break after 3rd speaker.

WEDNESDAY 16 NOVEMBER

8.00 - 9.00 **Registration**

9.00 - 10.00 **Opening**

- Welcome by Prof Frank Henning, President SAMPE Germany
- Plenary Session Chair Christian Keun, Organizing Cie. Conference Hamburg 22
- Opening by Guy Larnac, President SAMPE Europe
- Keynote presentation by Claudio Dalle Donne, Head of Materials, Processes & Tests, Airbus Operations Bremen
- Presentation Winners 37th Students Seminar by Guy Larnac, President SAMPE Europe



Prof Frank Henning



Christian Keun



Guy Larnac



Claudio Dalle Donne

10.00 - 10.30 **Coffee Break**

10.30 - 12.30 **Session 1 - 6 talks**

Room 1 Börsensaal	Room 2 Alber-Schäfer-Saal	Room 3 Elbe-Zimmer	Room 4 Alster-Zimmer
37TH STUDENTS SEMINAR WINNERS	AEROSPACE & SPACE	ADDITIVE MANUFACTURING	TESTING, DESIGN & SIMULATION I
<p>Session chair: Charlotte Salaun, Vice Chairman Jury, France</p> <ul style="list-style-type: none"> • <i>Best Master Student</i> • <i>Best PhD Student</i> 	<p>Session chair: Guy Larnac, Ariane Group, France</p> <ul style="list-style-type: none"> • <i>Sustainable Materials and Process Strategies for the Aircraft of Tomorrow</i> by Llorenç Llopert, Boeing Research & Technology, Germany • <i>Rapid Cure Prepreg for Aerospace Applications</i> by Jens ter Braak, Teijin Carbon Europe, Germany • <i>Safety-relevant composite structures for future resource saving jet engines</i> by Alrik Dargel, Rolls-Royce Deutschland \ TU dresden, Germany • <i>Manufacturing study on CFRP rear pressure bulkhead using Vacuum Assisted Process (VAP)</i> by Jan Faber, DLR, Germany • <i>A digital process-data-assessment method for tailored fiber placement preforms</i> by Jonas Kluger, TU Dresden, Germany • <i>Release properties of plasma polymeric coated polymer films and adhesive strength of transferred polyurethane coatings to fiber-reinforced thermosets</i> by Pascal Baur, Fraunhofer IFAM, Germany 	<p>Session chair: Simon Kaysser, CompriseTec, Germany</p> <ul style="list-style-type: none"> • <i>Hybrid Processing Advances Increase Versatility, Performance of Structural CFRTP Composites through Additive Manufacturing/Compression Molding</i> by Yannick Willemin, 9T Labs, Switzerland • <i>Innovative Thermoset Materials and Additive Manufacturing Processes to Eliminate Mechanical Anisotropy in Fused and Continuous Filament Fabrication</i> by Björn Riecken, CompriseTec, Germany • <i>Highly aligned discontinuous fibre composite filaments for fused deposition modelling: Layer investigation</i> by Narongkorn Krajangsawadi, University of Bristol, UK • <i>Determination of optimal process parameters for selective laser melting of fiber patches including draping effects with a foam-based gripper</i> by scanning path simulation by Joren Pelfrene, Flanders Make, Belgium • <i>Functional and lightweight composites using additive manufacturing</i> by Fidel Valega, Brightlands Materials Center, NL 	<p>Session chair: Prof. Bodo Fiedler, Hamburg University of Technology, Germany</p> <ul style="list-style-type: none"> • <i>Controlled delamination induced by symmetrical laser shock</i> by Marine Scius-Bertrand, Rescoll, France • <i>Analysis of transient response and failure initiation by impact demolding of composite parts</i> by Johannes Stolz, Faserinstitut Bremen, Germany • <i>Identifying design guidelines for inductive heaters in RTM process using numerical modelling</i> by Gero Förster, Faserinstitut Bremen, Germany • <i>Simulation-Driven Design (SFE) – A Concept for Forming Simulations</i> by Muhammad Saeed, Stuttgart University & TU Swinburne, Germany • <i>Health monitoring of CFRP Laminates under cyclic loading via vibro-acoustic modulation based measurements</i> by Erik Willmann, TU Hamburg, Germany • <i>Impact of Automated Fibre Placement Induced Defects on the Compression Behaviour of CFRP Structures</i> by Andreas Friedel, TU Braunschweig, Germany
ELA - EUROPEAN LIGHTWEIGHT ASSOCIATION			
<p>Session chair: Lena Wallbeck, Leichtbau BW, Germany</p> <ul style="list-style-type: none"> • <i>Optimized Polyurethane/PET Composites manufactured by Resin Transfer Molding</i> by Prof. Dr. Gion A. Barandun, OST Eastern Switzerland University of Applied Sciences Switzerland • <i>Induction Welding for Aerospace Applications: Challenge and Potential</i> by Stephan Becker, FACC Operations, Germany • <i>Functionalization of insitu pultruded parts to enable sustainable lightweight design - insight into the joint R&D projects of CompriseTec, IKT Stuttgart and Fraunhofer ICT</i> by Christian Keun, CompriseTec, Germany 			

12.30 - 14.00 **Lunch - Sponsor Exhibition & Poster Presentations**

14.00 - 15.20 **Session 2 - 4 talks**

Room 1 Börsensaal	Room 2 Alber-Schäfer-Saal	Room 3 Elbe-Zimmer	Room 4 Alster-Zimmer
HYDROGEN STORAGE	THERMOPLASTICS IN AEROSPACE I	AUTOMATION	TEXTILES AND PREFORMING
<p>Session chair: Volker Trappe, Bundesanstalt für Materialforschung und -prüfung (BAM), Germany</p> <ul style="list-style-type: none"> • <i>H2 meets Aviation – A presentation on hydrogen application in aircraft systems</i> by Tobias Meyer, CTC, Germany • <i>Novel structure-integrated hydrogen storage systems for aerospace applications</i> by Nicole Motsch-Eichmann, Leibniz Institut, Germany • <i>Sustainable composite H2 tanks: 15% material saving by automated dome reinforcements</i> by Florian Lenz, CevoTec, Germany • <i>Novel matrix materials and design concepts for high pressure hydrogen storage composite vessels</i> by Markus Wolfarth, PCC Leoben, Austria 	<p>Session chair: Sebastiaan Wijskamp, TPRC, NL</p> <ul style="list-style-type: none"> • <i>Development of an Out-of-Autoclave Thermoplastic Composite Spar</i> by Michael Wielandt, GKN Fokker, Netherlands • <i>Automated Fibre Placement (AFP) Consolidation with LMPAEK-Based Uni-Directional Tape: Achieving Thermosets Layup Speeds & Complex Large Parts Manufacturing</i> by Gilles Larroque, Victrex, France • <i>Innovative multi-technology thermoplastic fuselage panel</i> by Lucas Binsfeld, Airbus Atlantic, France • <i>Thermoplastic Processing Technologies Towards Industrialization</i> by Stefan Jarka, DLR, Germany 	<p>Session chair: Prof. Andrew Mills, Cranfield University, UK</p> <ul style="list-style-type: none"> • <i>Simulation of the placement behavior of fiber patches including draping effects with a foam-based gripper</i> by Matthias Kornmann, University of Applied Sciences Augsburg, Germany • <i>Smart sensors for autonomous robotic panel assembly</i> by Alfons Schuster, DLR, Germany • <i>Influence of Powder-Epoxy Towpregging Line Processing Parameters on Towpreg Consolidation</i> by Hanisa Hasrin, University of Edinburgh, UK • <i>Application of a novel ultrafast manual and automatic joining process for thermoplastic aircraft brackets to metallic and thermoset fuselage components using ultrasonic technology</i> by Philipp Köhler, CTC, Germany 	<p>Session chair: Florian Brillowski, RWTH Aachen, Germany</p> <ul style="list-style-type: none"> • <i>Determination of the shear angle on the basis of the geometric surface slope</i> by Boris Manin, RWTH Aachen, Germany • <i>Serial Process for Customized and Sustainable Semi-Finished Prepreg Products</i> by Florian Brillowski, RWTH Aachen, Germany • <i>Process window and weld strength analysis of ultrasonic spot welds on banded dry-fibre carbon tapes</i> by Nils Widmaier, TU Swinburne, Australia • <i>Development of automated preform technologies for complex shaped parts</i> by Henri de Vries, Royal Netherlands Aerospace Centre, NL

15.20 - 15.50 **Coffee Break**

15.50 - 17.50 **Session 3 - 6 talks**

Room 1 Börsensaal	Room 2 Alber-Schäfer-Saal	Room 3 Elbe-Zimmer	Room 4 Alster-Zimmer
INDUSTRIAL INNOVATION I	AEROSPACE MANUFACTURING I	AUTOMOTIVE & TRANSPORT	MECHANICAL CHARACTERISATION
<p>Session chair: Tim Wybrow, Nèos International, UK</p> <ul style="list-style-type: none"> • <i>Link between innovation and control – the sensitive balancing of standards and technological progress via superordinate closed-loop control</i> by Julia Beter, ENGEL Austria, Austria • <i>Enable Revolutionary Developments Sustainably and Scalably</i> by Max Schultes, RAMPF Group, Germany / USA / Canada • <i>Efficient manufacturing of composite components for aircraft interior applications</i> by Sebastian Bühler, Biontec, Switzerland • <i>Novel Composite Manufacturing Technologies for Green Mobility</i> by Marcus Kremers, Airborne, UK / Netherlands • <i>A novel thermoplastic rigid particle foam, meeting FST and Heat Release requirements of large (Interior) aircraft components</i> by Denis Holleyn, Evonik, Germany 	<p>Session chair: Tamara Blanco Varela, SAMPE Ibérica, Spain</p> <ul style="list-style-type: none"> • <i>Investigating the Hybridization Effect of Towpreg on the Bending Properties of Sheet Molding Compound Part</i> by Hao Wang, RWTH Aachen, Germany • <i>Equipment and process for high-rate RTM production of large aerospace structures</i> by André Bertin, Coeppair, Belgium • <i>Design of Modular, CFRP-Encased Power Electronic Converters for More-Electric Aircraft Applications</i> by Mark Higgins, University of Strathclyde, UK • <i>Design optimization procedure of autoclave loading based on process simulation and neural network</i> by Juhong Zhu, Faserinstitut Bremen, Germany • <i>Tailored non-crimp fabric for eVTOL propellers - optimized fiber materials for high mechanical performance and efficient manufacturing</i> by Rico Hubert, University of Applied Sciences Aachen, Germany • <i>Innovative translucent Epoxy-SMC for Applications with Flame retardant properties</i> by Simon Kaysser, CompriseTec, Germany 	<p>Session chair: Prof. Jyrki Vuorinen, Tampere University, Finland</p> <ul style="list-style-type: none"> • <i>High-speed compression of structural polymers</i> by Siebe Spronk, Solvay, Belgium • <i>Pathway Towards Inverse Design of Sandwich Panels: Equivalent Shell Model for Cellular Core Sandwich Panels</i> by Dilum Fernando, University of Edinburgh, UK • <i>Implementation of structural thermoplastic composites in a 45' intermodal container</i> by Jan Verhaeghe, Agesia - Structural Composite Technology, Belgium • <i>Ultrafast Terahertz Sensing for inline production control and automated inspection: Non-Destructive Testing and 3D Imaging of Composites and Bondings</i> by Uli Schmidhammer, TeraTonics, France • <i>Influence of compression behavior on skin formation in thermoplastic structural foams manufactured in a hot press process</i> by Maximilian Salmins, Leibniz Institut, Germany • <i>Analysis of the Fabrication and the Bending Strength of Bio-Based Sandwich Materials with Different Core Materials</i> by Mathias Engelfried, Stuttgart University, Germany 	<p>Session chair: Henrik Schmutzler, Lufthansa Technik, Germany</p> <ul style="list-style-type: none"> • <i>Combined tensile and dynamic testing for the accurate measurement of mechanical properties of composite materials</i> by Hugo Sol, Bytec, Belgium • <i>Microplastic deformation behavior of epoxy resin</i> by Janina Mittelhaus, TU Hamburg, Germany • <i>Influence of the Boundary conditions on the low-velocity-impact behaviour of curved composites plates</i> by Jannis Hüppauf, Leibniz Institut, Germany • <i>Influence of processing parameters on matrix-dominated properties of CF/PEKK composites</i> by Helena Pérez-Martin, University of Edinburgh, UK • <i>Investigation into the mechanical and thermal properties of different powder epoxies for composites applications</i> by Arun Alapati, University of Edinburgh, UK

18.30 - 21.30 **Happy Hour & Network Diner in Handelskammer Hamburg**



8.00 - 8.30

Registration

8.30 - 10.00

Session 4 - 5 talks

Room 1 Börsensaal

SUSTAINABILITY & RECYCLING I

Session chair: Prof. Ralf Schledjewski, Montanuniversität Leoben, Austria

- *Hygrothermal ageing and durability of bio-based composites and structures* by Aart van Vuure, KU Leuven, Belgium
- *Multi-level circular process chain for carbon and glass fibre composites by Christian Eitzinger, Profactor, Austria*
- *Influence of Additives on the Properties of Recycled Sheet Moulding Compound (SMC)* by Vera Austermann, RWTH Aachen, Germany
- *Microwave technology for energy-efficient heating and drying in composite production* by Andreas Bündgens, RWTH Aachen, Germany
- *Bio-based fiber-reinforced composites – an approach to decarbonize* by Stephan Sprenger, Evonik, Germany

Room 2 Alber-Schäfer-Saal

CTC

Session chair: Marc Fette, CTC, Germany

- *Lightweight production 4.0 - requirements from Airbus perspective to enable the future of connected manufacturing* by Jan-Patrick Kalckhoff, Airbus, Germany
- *An Artificial Intelligence Approach for Creating Automatic Semantic Device Descriptions for Brownfield Industrial Robots* by Jonas Ehrhardt, Helmut-Schmidt-Universität Hamburg, Germany
- *Impact of alignment of the sonotrode on the quality of thermoplastic composite joints in continuous ultrasonic welding* by Maryam Ahanpanjeh, Helmut-Schmidt-Universität Hamburg, Germany
- *Potentials and future applications for direct embedded sensor technology by using Additive Manufacturing* by Marc Florian Meyer, Helmut-Schmidt-Universität Hamburg, Germany
- *Automated stress-constrained manufacturing process for 3D Fiber Layup* by Pezhman Pourabdollah, Airbus, Germany

Room 3 Elbe-Zimmer

SPORTS & LEISURE

Session chair: Hans Jürg Gysin, XYLOSH, Switzerland

- *Dry fiber placement and sustainability for sporting goods* by Joerg Kaufmann, TU Chemnitz, Germany
- *Mechanical performances of innovative healable composites by Cohades Amaël, CompPair Technologies Ltd, Switzerland*
- *Moulding of thermoplastic nonwoven sheet materials in a vacuum membrane press. - Web Based Composites for sport and medical parts* by Felix Teichmann, ITA Augsburg, Germany
- *AFT, and How Does it Cut the Weight & Costs of Bike Components?* by Hannes Schütte, 9TLabs, Switzerland

Room 4 Alster-Zimmer

JOINING & BONDING

Session chair: Henrik Schmutzler, Lufthansa Technik, Germany

- *Susceptor Aided Induction Welding of UD Peek/Carbon Fiber Composites* by Alfonso Maffezzoli, University of Salerno, Italy
- *Continuous ultrasonic welding of carbon fiber reinforced thermoplastic thin plies* by Saber Maamri, University of Salamanca, Spain
- *Robust Assembly - Quality Assured Welding Technologies for Full-Scale Applications* by Manuel Endrass, DLR, Germany
- *Analyzing of matrix hybrid composite joints* by Tobias Karrasch, University Augsburg, Germany
- *Implementation of the structural bonding process from the laboratory to the industrial application of aviation* by Samir Abdul, Helmut-Schmidt-Universität, Germany

10.10 - 10.30

Coffee Break

10.30 - 12.10

Session 5 - 5 talks

Room 1 Börsensaal

SUSTAINABILITY & RECYCLING II

Session chair: Prof. Aart van Vuure, KU Leuven, Belgium

- *Composites sustainability – Manufacturing, repair, and recycling are challenging* by Ralf Schledjewski, Montanuniversität Leoben, Austria
- *Effects of different environmental exposures on the properties of natural fibre reinforced biocomposites* by Hom Dhakal, University of Portsmouth, UK
- *Permeability, Compressibility and Relaxation Characteristics of Knitted Cellulose Regenerated Fibre Textiles* by Marcel Bender, Montanuniversität Leoben, Austria
- *Interfacial Characterisation of Natural Fibril/Polypropylene Composites Using Single Fibre Fragmentation Test (SFFT)* by Ross Minty, University of Strathclyde, UK
- *Mono-Material Sandwich Structures – An Overview* by Sascha Kilian, Fraunhofer ICT, Germany

Room 2 Alber-Schäfer-Saal

THERMOPLASTICS IN AEROSPACE II

Session chair: Arnt Offringa, GKN Fokker, NL

- *Assembly of the lower half of a Thermoplastic Multifunctional Fuselage Demonstrator* by Gabriele Ridolfi, GKN Fokker Aerospace, NL and Abhas Choudhary, SAMIXL, NL
- *Aircraft structural parts based on thermoplastic UD-tapes – A comprehensive processing approach including tape laying and injection overmolding using the example of an aircraft door outer skin* by Mathias Muehlbacher, Neue Materialien Bayreuth, Germany
- *Co-consolidation of metal-thermoplastic composite joints: analysis and optimisation of the interface* by Vanessa Marinosci, TPRC, NL
- *Innovating towards large scale Implementation of TPC's in Aerospace* by Tjitsje Slange, Toray Advanced Composites, UK
- *Integrated solutions for large, complex stiffened thermoplastic composite structures* by Peter Boer, Collins Aerospace, NL

Room 3 Elbe-Zimmer

CIVIL AND MARINE ENGINEERING

Session chair: Prof. Conchúr Ó Brádaigh, University of Edinburgh, UK

- *Development and validation of a gravity independent inline impregnation method for multi-tow robotic coreless fiber winding* by Marko Szczeny, TU Stuttgart, Germany
- *An Innovative Light-Weight FRP Composite Bridge Deck Panel* by Dilum Fernando, University of Edinburgh, UK
- *Exploration of composite materials application on noise mitigation systems* by Duo Zou, Royal IHC, NL
- *Coextruded Polymeric Bicomponent Fibers for Concrete Reinforcements* by Jonas Herz, Rosenheim Technical University of Applied Sciences, Germany
- *Investigation of Recyclable Acrylic Monomer Resins for Marine and Renewable Energy Composite Applications* by Machar Devine, University of Edinburgh, UK

Room 4 Alster-Zimmer

TESTING, DESIGN & SIMULATION II

Session chair: Maria Dolores Vázquez-Navarro, SAMPE Ibérica, Spain

- *Reduction of emissions by means of improved materials testing and exploitation on basis of a digital twin* by Jan Seidel, Applus+ Laboratories and Jens Bold, Boeing Research and Technology Europe, Germany
- *Estimation of the permeability tensor based on machine learning approach* by David Droste, Faserinstitut Bremen, Germany
- *Towards a three-dimensional compaction model for non-planar geometries* by Dennis Bublitz, TU München, Germany
- *Simulation Based Forecast of Critical Quality Metrics for Thermoplastic Automated Fiber Placement* by Lars Brandt, DLR, Germany
- *A Novel Method to Obtain Smeared Properties of a Fiber-Matrix System Including Stress Concentration* by Cihan Talebi, METU (Middle East Technical University) /Roketsan, Turkey

12.10 - 13.50

Lunch

12.15 - 14.00

Plant Tours Leaving

17.00 - 18.00

Plant Tours back at Handelskammer Hamburg

POSTER PRESENTATIONS

• *Co-Consolidation of Tape-Preforms to realize local reinforcements in stamp-forming* by Julian Weber, Leibniz Institut, Germany

• *Investigation of high performance elastic textile reinforcements for drapability to fabricate doublecurved textile reinforced concrete (TRC) elements* by Shantanu Bhat, RWTH Aachen, Germany

• *Development of a Continuous Manufacturing Process for Wound Tubular Structural Elements Based on Thermoplastic Hybrid Yarns* by Dominik Granich, RWTH Aachen, Germany

• *Novel through-thickness reinforcement of foam-core sandwich composite panels* by Mohamed Saleh, Technolgy Innovation Insitute, United Arab Emirates

• *Introducing Fibrarforce Technology – Revolutionizing the high-volume production of customized multiaxial thermoplastic cross-plyes* by Lars Linnemann, Fibraworks, Germany

• *A comparative study on using BESO and SIMP to optimize the design of laminated carbon fiberreinforced plastics using topology optimization* by Vinay Nagaraj, Leibniz Institut, Germany

• *New Particle Foam Core for automated high volume mass Production of Sandwich Aerostructures* by Alexander Roth, Evonik, Germany

• *Sustainable compression-molded composites using recycled polyester carpets and bottling discards* by Ranji Vaidyanathan, Oklahoma State University, USA

• *Development of an Insert Connection for Sandwich Structures under Localised Load* by Stefanie Zimmermann, Hochschule Mittweida, Germany

• *Test setup investigations for faster FE-calibration via advanced measurement techniques* by Christoph David, DLR, Germany

• *100% thermoplastic and recyclable sandwich panel for Aerospace* by Thomas Poumadere, DIAB, Sweden

• *Development of composites using waste mixed plastic and waste glass fibres for value-added products* by Kit Orourke, University of Edinburgh, UK

• *High barrier epoxy resin We developed epoxy resin for TypeV vessels that can retain gases well* by Kousuke Ikeuchi, Mitsubishi Gas Chemical, Japan

• *Modeling and simulation of the fabrication of glass/Elium® acrylic thermoplastic resin composites by the infusion process* by Nihad Siddiq, IRT Jules Verne, France

• *Variable Angle Composite Plate's Thermal Buckling Analysis* by Fatih Baran, Istanbul Technical University, Turkey

• *Aerodynamic high-pressure hydrogen CFRP vessels with increased storage energy density for green aviation: Novel design and dimensioning method* by David Schlegel, Technische Universität Dresden, Germany

• *Study on edge resin outflow during prepreg CFRP cure* by Yusei Kondo, Mitsubishi Heavy Industries, Japan

• *Induction welding of recycled UD tape compounds* by Maarten Labordus, DAHER / KVE, France / Netherlands

The poster with the most votes wins

SCAN and VOTE for your favourite poster presentation(s)



There is a Delegates Award, to be selected by online voting, for the best poster presentation.

The prize for the lead author is an invitation to attend SAMPE Europe Summit 2023, Paris and a free ticket to JEC World 2023.

To vote, use the camera on your mobile, SCAN the QR code of your favourite posters.

You may vote for all the posters you like. **Voting closes at 12.00 Hrs 17th November 2022.**

37TH STUDENTS SEMINAR 2022

Jury 37th SE Students Seminar 22

Chairman
Christian Weimer, SAMPE Germany

Vice Chairman
Charlotte Salaun, SAMPE France

Members
Adrie Kwakernaak, SAMPE Benelux
Matthias Geistbeck, SAMPE Germany
Markus Zogg, SAMPE Switzerland
Carwyn Ward, SAMPE UK
Jim Johnson, SAMPE USA
Scott Beckwith, SAMPE Global

• *Exploring biaxially oriented polypropylene laminates for suitcase application: a time-dependency analysis of mechanical performance* by Arianna Tavano, KU Leuven, Belgium

• *Evaluation of the mechanical performance of short straw flax fiber reinforced polylactic-acid (PLA) composites* by Sofie Verstraete, KU Leuven, Belgium

• *Viscoelastic material model for nanocomposite* by Pradeep Ramanan, Tampere University, Finland

• *Vitrimer composites for Aeronautics* by Vincent Schenk, Université Toulouse III Paul Sabatier, France

• *Damage modeling of plasma sprayed ceramics under dynamic stresses using a discrete/continuous multi-scale approach* by Vincent Longchamp, Arts et Métiers Paritech, France

• *Investigation of the frequency influence on the fatigue behaviour of short glass fibre reinforced plastics using quasi-isothermal tests* by Daniel Fritsche, IKV - RWTH Aachen University, Germany

• *Design and Modeling of the ceramic femoral component of knee prototypes* by Anna Rita Terizzi, University of Salento, Italy

• *Inorganic matrix composite strengthening systems: bond behaviour and durability in alkaline environments* by Giuseppe Bramato, University of Salento, Italy

• *Working on the development of thermoset recyclable resins* by Isaac Loreto Gomez, University Rey Juan Carlos, Spain

• *Composites - CFRP for cryogenic application in LH2 tanks for commercial aircraft* by Eduardo Gonzalo Miguel, University Carlos III, Spain

• *Machine learning based data-driven automated fibre placement* by Philip Druiff, University of Bristol, UK

• *Inter-ply friction in dry composite preforming* by Guy Lawrence, University of Nottingham, UK

• *Lightweight hip module for the "Enhanced Hybrid" exoskeleton* by Luca Keller, IWK Ost, Switzerland

• *3D printing from phenoxy – filament production, process parameters and potential application* by Delal Arslan, FHNW, Switzerland

SAMPE GERMANY INNOVATION AWARD 2022

• *Extension of the Test Bench for the Investigation of the Fused Filament Fabrication of High-Performance Polymers* by Margarita Etchegaray Bello, Technical University Munich, Germany

• *Investigation of the frequency influence on the fatigue behaviour of short glass fibre reinforced plastics using quasi-isothermal tests* by Daniel Fritsche, IKV - RWTH Aachen University, Germany

• *Analysis of the influence of compaction during the Automated Fiber Placement process on the mechanical properties of composite laminates* by Sylvester Vogl, Technical University Munich, Germany

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STUDENT SEMINAR SPONSORS

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TABLE TOPS HAMBURG 22

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