Programme



Date: 3 – 5 October 2023 Location: Euroforum El Escorial Madrid, Spain

TUESDAY 3 OCTOBER

Pre-Conference Tutorials and Showcases

by Spanish and Portuguese Composite related Companies and Institutes

- **Entrance Euroforum El Escorial Madrid** 13.30 **Registration Tutorial**
- SALA 1 Tutorial 1 Process Automation and Digitalization 14.00 - 17.00 Chair: Bernd Demel, Airbus Helicopters, Germany SALA 4 + 5 - Tutorial 2 - Sustainability Chair: José Sanchez, SAMPE Ibérica, Spain

FIDAMC, Spain

Tail boom-outcome project: rear

fuselage manufacturing process for

to weld assembly by Guillaume Vincent,

assessment of overmoulded carbon

composites under quasi-static and

Faserinstitut Bremen e. V., Germany

Optimizing Continuous Ultrasonic

Welding Parameters for Enhanced

Bonding in Carbon Fiber Thermoplastic

Materials by Roberto Guzman, University

Room 2 Auditorio 2

fatigue loading by Robert R. Enderle,

IRT Jules Verne, France

of Salamanca, Spain

TPRC, NL

Experimental joint strength

fibre-reinforced PEEK/LMPAEK

WEDNESDAY 4 OCTOBER

8.00 - 9.00	Registration			
9.00 - 10.00	Plenary Opening Session			
9.00	Welcome by Tamara Blanco, President SAMPE Ibérica	1231	- 23	1 25
	Opening by Guy Larnac, President SAMPE Europe		A	
9.05	Javier Ponce, General Director of CDTI, Spain	Tamara Blanco	Guy Larnac	Javier Ponce
9.15	Key-note Airbus - Ricardo Rojas, Senior Vice President,			
	National Representative of Airbus Commercial Aircraft Spain			
	Key-note Boeing Llorenç Llopart, Global leader for Materials and Manufacturing Technologies, The Boeing Company			
9.55	Presentation Winners 38th Students Seminar by Charlotte Salaün	Ricardo Rojas	Llorenç Llopart	Charlotte Salaün
10.00 - 10.30	Coffee Break			
10.30 - 12.30	Session 1 - 6 talks			
Room 1 Aud	itorio 1 Room 2 Auditorio 2 Room 3 Sala	4 + 5	Room 4 Sala 1	

COMPOSITES RECYCLING I Session chair: Marc Fette, SAMPE

Germany / CTC - Airbus • Upcycling Bring waste materials back into structural Parts by Yannick Willemin, 9T Labs, Switzerland

 A study on the mechanical recycling of continuous glass fiber reinforced nylon 6 profiles produced by in-situ pultrusion by Michael Wilhelm, Fraunhofer Institute for Chemical Technology ICT, Germany

 Extralife of Structural Thermoplastic CFRC Parts by Alain Vinet, Airbus CRT France, France

• Processing of recycled carbon fibre into unidirectional tapes - circular economy for green composites by Felix Teichmann, Institut für Textiltechnik (ITA) Augsburg, Germany

manufacturing in Airbus Helicopters by Bernd Demel, Airbus Helicopters, Mora-Mendias, FIDAMC, Spain Nikos Pantelelis, Synthesites, Greece in the Manufacturing of Helicopter Parts by Santiago Aranda Gallardo Thermoplastic welding, Dry Fiber Pick Friction Measurement on Towpregs Germany Airbus Helicopters, Germany and place, function integrated for the Filament Winding by Benedikt manufacturing by Christoph Frommel, Bergmann, Leibniz-Institut für Solid Epoxy Prepregs with Patterned • Full and local reinforcement of CF-PP German Aerospace Center (DLR), Resin Distribution for Out-of-Autoclave Verbundwerkstoffe GmbH (IVW), Flakes to create high performance Processing by Jan Philipp Janzen, Germany Germany parts with recycled base material by Leibniz-Institut für Verbundwerkstoffe Philipp Wigger, Aachen Center for • Full-Scale Application of in-situ GmbH (IVW), Germany Spectroscopic Analysis of PrePregs Integrative Lightweight Production (AZL) Automated Fiber Placement for the by Moritz Salzmann, Montanuniversitaet of RWTH Aachen University, Germany Production of a Fuselage Segment by Tailored Non-Crimp Fabrics in Urban Leoben, Austria Air Mobility (UAM) – Evaluation of a Dominik Deden, German Aerospace suitable polymer-based binder material for processing dry UD tape-based Center (DLR), Germany tailored non-crimp fabrics in eVTOL propeller blades in terms of permeability and drapability properties by Rico Hubert, UAS Aachen, Germany 12.30 - 14.00 Lunch 14.00 - 15.20 Session 2 - 4 talks Room 1 Auditorio 1 Room 2 Auditorio 2 Room 3 Sala 4 + 5 Room 4 Sala 1 THERMOPLASTIC WELDING **TESTING AND** ADDITIVE MANUFACTURING CHARACTERIZATION II Session chair: Mikko Kanerva, SAMPE Session chair: Cédric Dupas, SAMPE Session chair: Hans Jürg Gysin, Finland / Tampere University France / DAHER SAMPE Switzerland / XYLOSH Session chair: Antonio Fernandez. Univ Politécnica Madrid, Spain Seamless integration of electrical Experimental determination of Development of induction welded mechanical properties of additively horizontal tail plane based on ud components in lightweight composite • Impact of impacts: Structural Health manufactured continuous carbon fibre carbon thermoplastic composite by structures for UAVs by Jascha Schmied, Monitoring of pressure vessels with BIONTEC - Bionic Composite reinforced polymer parts produced by Maarten Bach, Daher/KVE, Netherlands fiber-optic sensors by Jannick Fuchs, a novel laser sintering process by Technologies AG, Switzerland Institute for plastic processing (IKV) at Conduction welding for a fuselage Michael Baranowski, Karlsruhe Institute RWTH Aachen University, Germany • Mechanical GFRP-Fastening Systems application – from thermal simulations of Technology (KIT), Germany

AEROSPACE MANUFACTURING & OOA MANUFACTURING Session chair: Guy Larnac, SAMPE Session chair: Elena del Puerto, Europe / Ariane Group, France Airbus Operations SL, Spain University, Spain Design and manufacturing of a full Improving the impact behaviour of composite integral wingbox by Peio carbon composites and the resin Olaskoaga, IDEKO, Spain transfer moulding process by the integration of bi-component non-· Industrial demonstrator of and woven veils by Adli Dimassi, advanced rear end in composites by Faserinstitut Bremen e. V., Germany Luis Aliaga, Aernnova, Spain Resin Transfer Molding of Hollow Parts with In Situ Generation of Polyurethane Cores by Alexander Faas, High-rate, high-quality and low cost production solution for large composite aerostructure using Resin Transfer Leibniz-Institut für Verbundwerkstoffe Moulding (RTM): Wing Spar GmbH (IVW), Germany demonstrator by Alice Salmon Coexpair., Belgium and Betty Fantina, Recent advances in epoxy resin

technology for the manufacture of hiah-performance composites parts by Resin Transfer Moulding by Krzysztof Gugula, Westlake Epoxy, Germany

fast rotorcraft platform (racer-rapid and cost effective rotorcraft) by Maria • A new path for rotor blade Recycled Carbon Fibres for Circularity

m 4 Sala 1

TRATER DEFERSE

TESTING AND **CHARACTERIZATION I**

Session chair: Josep Costa, Girona

Technique for Reconstructing Local Fibre Orientation in Sheet Moulding Compound Employing Surface Strain Measurements by Hao Wang, Aachen Center for Integrative Lightweight Production (AZL) of RWTH Aachen University, Germany

• Measuring techniques for prepreg tackiness: A comparative study by Dennis Budelmann, Clausthal University of Technology, Germany

 Integrated Process Monitoring for Robotic Draping of Carbon Fibre by Dominik Zielinski, Profactor GmbH, Austria

 Intelligent Process Monitoring for CFRP RTM production in Aerospace by

 Advance fabrication of a drone using 3d printing with embedded sensors and wiring by Rakel Herrero, Fundacion I+D Automocion y Mecatronica (Naitec), Spain

 3D printed composite parts with improved performance by Richard Janssen, TNO - Brightlands Materials Center, Netherlands

• Tubular Honeycomb for Crashworthiness Applications via ABS-R Additive Manufacturing by Colleen Murray, University of Maryland, USA

15.30 - 16.00 **Coffee Break**

16.00 - 18.00

Session 3 - 6 talks

Room 1 Auditorio 1

COMPOSITES RECYCLING II

Session chair: Cristina Elizetxea, Inasmet, Spain

 Recycling of Aramid Thermoset Composites by Walter Nijhuis, Teijin Aramid, Netherlands

• Diverted from Landfill: Manufacture and characterisation of composites from waste plastic packaging and waste glass fibres for value-added products by Kit O'Rourke, University of Edinburgh, United Kingdom

 Thermoformable multilayer composite based on pcr PP and rCF nonwoven as a contribution to the circular economy by Richard Vocke, Faserinstitut Bremen e. V., Germanv

 Recyclable Epoxy Resin Matrices for Sustainable Printed Circuit Board (PCB) Substrates - Influence of Matrix System on Dielectric Properties and Recyclability of GFRP - by Martin Demleitner, Polymer Engineering -University of Bayreuth, Germany

 Recycling strategies for CFRP aerospace components using the example of a drive shaft for a next generation geared jet engine by Alrik Dargel, Technische Universität Dresden, Germany

• New life for vacuum bags and carbon fibers by Almudena Canas Rios, Airbus Operations, Spain

 Sensor for Quality Control of Semi-finished Materials from Recycled Carbon Fibre by Alexander Walch, Profactor GmbH. Austria

 Sensor-based and data-driven composites manufacturing optimization by Nicholas Ecke, NETZSCH Process Intelligence GmbH, Germany

• Elastic Sensor Fibers for Strain Sensing Applications by Jeanette Ortega, RWTH Aachen University, Germany

Room 4 Sala 1

MODELING & SIMULATION I

Session chair: Pedro Camanho, Porto University, Portugal

· Virtual optimization of a sensorbased filling strategy for rtm processes by David Faron, Technical University of Munich, Germany

• Development of a digital twin for automated fiber placement by Kevin Scheiterlein, Fraunhofer Institute for Casting, Composite and Processing Technology IGCV, Germany

• Automated Fiber Placement: Modeling the influence of compaction roller properties on manufacturable geometries by Tim Tiemann, Leibniz Universität Hannover, Germany

COMPOSITE PROCESSING

Session chair: Alicia Ayuso, Airbus Defence & Space, Spain

 Study on industrial application of cfrp powder-epoxy towpreg: bike frame manufacturina via filament winding by Louis Moore, The University of Edinburgh, United Kingdom

 Investigation of Compaction Roller Pressure Effectiveness on Powder *Epoxy Towpreg Consolidation* by Hanisa Hasrin, The University of Edinbrugh, United Kingdom

• Experimental study on mechanical properties of composites manufactured by hand-layup and automated fiber placement (AFP) with different gap and staggering configurations by Eylem Özen, ROKETSAN INC., Tu

THERMOPLASTICS I BONDING & REPAIR Session chair: Sebastiaan Wijskamp, Session chair: Xoan Xose Fernandez, Univ Rey Juan Carlos Madrid, Spain CFRP mini-hard patch bonded repairs by Inés Nieto, Airbus Operations S.L., Spain Self-Healable epoxy coatings Chemical Technology, ICT, Germany Inside hybridization of CF/PAEK hollow profiles by means of injection molding by Veit Würfel, Technische URJC Madrid, Spain Universität Dresden, Germany • Process development and characterization of a locally reinforced thermoplastic Sheet Molding Compound by Sergej Ilinzeer, Germany Fraunhofer Institute for Chemical Technology, ICT, Germany Investigating the AFP Process Window for TC1225 UD Tapes using the Mandrel Peel Test by Tom Asijee, TPRC / University of Twente, Netherlands • Lider project – bus techno brick: sustainable bumper for a helicopter by fibre reinforcement thermoplastic composite (frtc) by Eduardo J. Martín Paradas, Airbus Helicopters España,

 Innovative Thermoplastic Welding and Manufacturing by Pedro Martín, Boeing Europe, Spain

Spain

For Demanding Industrial Applications

Performance targets and routes to

structural power composites for fully

Greenhalgh, Imperial College London,

by Rudi Velthuis, Hitachi Energy,

achieve industrial adoption of

electric transportation by Emile

Switzerland

United Kingdom

Room 3 Sala 4 + 5

 Optimizing Processing Parameters for Glass Fiber Reinforced Polycarbonate LFT-D Composites by Christoph Schelleis, Fraunhofer Institute for

> reinforced with recycled carbon fibers by Pablo Vazquez Sanchez, Airbus Operations, Spain and Alberto Jimenez,

> > Production and torsion testing of rotationally molded hybrid composited drive shafts by Patrick Schaible, Karlsruhe Institute of Technology (KIT),

> > Investigation of the adhesion strength of prepreg tapes to honeycomb cores for AFP-manufactured sandwich structures by Nils Siemen, Technical University of Munich, Germany

38TH STUDENTS SEMINAR **WINNERS**

Session chair: Charlotte Salaun, Students Seminar / 3M, France

Best Master Student

Best PhD Student

18.00 - 18.45 "Spanish Wine" - Cocktail

18.45 - 19.45 **Plenary Panel Discussions on Conference Theme related Topics** Chair: Jeff Sloan, Composites World, USA

> A. Impact of sustainability challenges on composite industry & supply chain Panelists: Arnt Offringa (director global Technology Center Netherlands at GKN), Christian Keun (President SAMPE Global / Comprisetec CEO), Susana Carballo Cuesta, Director of Aerostructures in Airbus Operations

B.Talent capture and retention in composite industry Panelists: Marc Fette (CTC - CEO), Llorenç Llopart (Global leader for Materials and Manufacturing Technologies, The Boeing Company), Charlotte Salaün (SAMPE Europe - Students Coordinator / 3M)

20.00 - 21.30 **Network Dinner**











Arnt Offringa





Charlotte Salaün Susana Carballo Cuesta

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THURSDAY 5 OCTOBER

8.00 - 8.30 8.30 - 10.00

Session 4 - 4 talks

Registration

Room 1 Auditorio 1

COMPOSITES LIFE CYCLE ANALYSIS

Session chair: Eduardo de la Guerra. TALGO, Spain

SESSION KEYNOTE:

· LCA of Carbon Fibres: exploring the reasons behind the hugely diverging published data by Ignaas Verpoest, Composite Materials Group KU Leuven (Belgium), Belgium

• Life cycle assessment of new TALGO lightweight prototypes by Marta Cerdeira Peinado, TALGO, Spain

 Composite enabled sustainable aviation by Uwe Beier, Airbus CRT Germany, Germany

• Life cycle analysis: A comparison of thermoset based autoclave curing, isothermal and variothermal press processing and automated fiber placement with in situ consolidation by Vincent Backmann, Technical University of Munich, Germany

THERMOPLASTICS II Session chair: Peter Boer, Collins Aerospace, Netherlands SESSION KEYNOTE:

Room 2 Auditorio 2

 Thermoplastic Composites – SAMPE Technical Committee State of the Technology Assessment by David Leach, ATC Manufacturing, USA, Cédric Dupas, Daher Aerospace, France and Alberto Lario, Toray Advanced Composites, Netherlands

 Optimization of laminate quality in thermoplastic automated fiber placement by repassing by Kilian Seefried, Fraunhofer Institute for Casting, Composite and Processing Technology IGCV. Germany

 Effect of surface preparation on paint adhesion to thermoplastic composites by Marten van der Werff, Thermoplastic Composites Research Center, Netherlands

 Development of a thermoplastic prepreg based on a partially polymerized reactive resin system by Andreas Krämer, Leibniz-Institut für Verbundwerkstoffe GmbH (IVW), Germany

Room 3 Sala 4 + 5

& CHARACTERIZATION III

Session chair: María Dolores Vázquez-Navarro, SAMPE Ibérica / Boeing, Spain

SESSION KEYNOTE: Saving resources by improving material test procedures and applying innovative simulation models by Jens Bold, Boeing Research & Technology Europe, Germany

 Out-of-plane strain measurements of CFRP with the use of triplane Digital Image Correlation by Nikolas Korte, University of the Bundeswehr Munich, Germany

 Characterization of mechanical properties of composite materials at cryogenic temperatures by means of destructive testing by Jose-Maria Collado, Airbus, Spain

• High-speed thermal mapping of composite materials during different mechanical tests of ultimate strength by Mikko Kanerva, Tampere University, Finland

Room 4 Sala 1

INDUSTRIAL INNOVATION II

Session chair: Tim Wybrow, SAMPE UK & Ireland

SESSION KEYNOTE: Sustainable and Circular Design with Production in Aircraft Interiors by Christian Keun, Comprisetec, Germany

Industry 4.0 implementation framework for composite manufacturing: From business requirements to system architecture by Miroslav Stojkovic, Airborne Composites UK, United Kingdom

 New core material ROHACRYL[™] in wind blades – a model-based approach to weight reduction by Henning Hintz, Evonik Operations & TPI Composites Germany, Germany

 Thermal Cycling of Dahltram® 3D Printed Tooling by Tomas Hadrava, Airtech, Luxemburg

10.10 - 10.30 **Coffee Break**

10.30 - 12.30 Session 5 - 6 talks

Room 1 Auditorio 1

BIO SOURCES AND RECYCLABLE CHEMISTRIES

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

 Optimized process design for the production of bio-based rPLA-organo sheets with bast fiber reinforcement by Maximilian Salmins, Leibniz-Institut für Verbundwerkstoffe GmbH (IVW), Germany

 Thermal stability of an aeronauticgrade epoxy-based vitrimer by Daniel Sánchez Rodríguez, Universitat de Girona, Spain

 Vitrimeric resins based on AFD/epoxy for self-healing and reprocessing capabilities in composite structures by Xoan Xosé Fernández Sánchez-Romate, Universidad Rey Juan Carlos, Spain

· Lignin Derived Carbon Fibres - A Sustainable Alternative to Their Petroleum-Based Counterparts by Mark Vaughan, University of Limerick, Ireland

· Looking for improving sustainability in composite materials and manufacturing processes by Cristina Elizetxea, TECNALIA, Spain

• Thermomechanical healing, recycling, and thermoforming of a reversible cnt-epoxy / glass fiber composite by Isaac Lorero, Universidad Rey Juan Carlos, Spain

Room 2 Auditorio 2

HYDROGEN STORAGE COMPOSITE TANKS

Session chair: Christian Keun, SAMPE Global / Comprisetec, Germany

 Hydrogen storage systems for mobile applications by Nicole Motsch-Eichmann, Leibniz-Institut für Verbundwerkstoffe GmbH (IVW), Germany

Lightweight and High-Pressure: Manufacturing Type 5 All-Composite Pressure Vessels for Gaseous Hydrogen Storage in Aerospace and Aviation by Ranji Vaidyanathan, Infinite Composites Inc., USA

 New design approach for multi-cell pressure vessels - Tension test of co-consolidated short-fiber reinforced threads on hollow thermoplastic profiles by Jan Condé-Wolter, Technische Universität Dresden, Germany

• Permeability assessment of biobased thermoplastic matrix laminated composite tubular sample under cryogenic thermomechanical loading by Timothée Klein, Airbus CRT France, France

 Crack analysis in CFRP by means of fiber optical sensors by Josef Koord, German Aerospace Center (DLR), Germany

Development and optimization of

- gas barrier in liner-less type V
- hydrogen pressure vessels by Florian
- Wanghofer, Polymer Competence Center Leoben GmbH, Austria

Room 3 Sala 4 + 5

Session chair: Jose Antonio Rodriguez, Airbus, Spain

 Artificial Intelligence methods for preliminary sizing of aircract structures by Raul Llamas Sandin, Airbus Operations, Spain

 Automation of the composite *manufacturing process simulation cycle* by Juan Manuel González-Cantero, Áirbus Óperations, Spain

 Finite element simulation of process temperatures during laser based cutting of unidirectional CFRP and evaluation of heat affected zone by Jan Keuntje, Laser Zentrum Hannover e.V., Germany

 Model-driven Approach for integrated Design and Process Planning of Fiber Composite Aerostructures by Maximilian Holland, Fraunhofer Institute for Casting, Composite and Processing Technology IGCV, Germany

 Technology-driven modelling approach for the failure analysis of spatially curved laminates with discontinuous fibers by Prof. Dr.-Ing. Neven Majic, Augsburg Technical University of Applied Sciences, Germany

 Enabling discontinuous fibre composites in high performance aerospace applications through robust simulation technology by Connie Qian, University of Warwick, United Kingdom

Room 4 Sala 1

GRAPHENE AND NANO-REINFORCED COMPOSITES

Session chair: Luigi Torre, SAMPE Italy / Perugia University

• Enhancement in flexural fatigue response of graphene nanoplatelets coated unidirectional carbon fiber epoxy composites by Alok Kumar Srivastava, Indian Institute of Technology Bombay, India

 Analysis of the compression strength after impact of woven carbon/epoxy laminates loaded with graphene particles by Jorge Lopez Puente, Universidad Carlos III de Madrid, Spain

 Dual curing epoxy-based system reinforced with CNT to allow thermal activation by Joule effect by Ignacio Collado Ropero, Universidad Rey Juan Carlos, Spain

 Strain sensors based on carbon nanoparticles-doped silicone rubber *for biomedical purposes* by Antonio del Bosque García, Rey Juan Carlos University - Catholic University of Ávila, Spain

12.30 - 14.00 Lunch 13.00 - 18.00

Plant Visits. Transport by bus Euroforum - Company Location vv. Tours to Airbus Aernnova Heycel and IMDEA/EIDAMC

graphene oxide filled epoxy composition for high toughness and

Tours to Talgo and INTA leave at 14.00 Hrs - After lunch at Euroforum.

POSTER PRESENTATIONS

 Adapting intumescent/low-melting glass flame-retardant formulations for transfer to alass-fiber-reinforced composites and post-fire mechanical analysis by Sruthi Sunder, Polymer Engineering - University of Bayreuth, Germany

 Energy-efficient heating and drying with microwave radiation by Andreas Bündgens, Institut für Textiltechnik (ITA) of RWTH Aachen University, Germany

 3D surface rectification with abrasive waterjet machining: application to a *carbon/epoxy master* by Agathe Jaillon, Bayab Industries, France

 Sustainability with Aramid and Carbon Fibers from TEIJIN by Dr. Markus Schneider, TEIJIN Carbon Europe, Germany

• Enhancing Fibraforce Technology – Development of a highly productive and efficient joining process for continuously manufactured thermoplastic cross-ply materials based on ultrasonic welding by Lars Linnemann, Fibraworks GmbH, Germany

 Non-destructive 3D Damage Distribution Analysis of Composite Materials using X-ray Computed Tomography by Alba Pascual, IMDEA, Spain

 Prediction of porosity in CFRP from ultrasonic signals using deep learning by Alberto Vicente, IMDEA, Spain

 Recycling of fibre reinforced plastic waste by pyrolysis: the experience of more than 10 years in the valorisation of the by-products by Lopez-Uriona Barrenechea, Bilbao University, Spain

 A Review of Shape Memory Polymer Applications in Tooling for Composite Manufacturing by Fabian Neumann, German Aerospace Center (DLR), Germany

 Energy optimized process design and scheduling in the field of large scale CFRP parts by Jannis Eckhoff, Helmut-Schmidt-Universität, Germany

 Digital process chain for thermoplastic structural components with local unidirectional reinforcements for aerospace applications by Nithya Sindhe Narayana Rao, Leibniz-Institut für Verbundwerkstoffe GmbH (IVW), Germany

 Mechanical performance of unidirectional rCFRP for load-bearing applications by Christian Becker, Leibniz-Institut für Verbundwerkstoffe GmbH (IVW), Germany

 Development of an innovative thermoplastic Door-Surround-Structure for a single-aisle-aircraft by Jannis Hüppauff, Leibniz-Institut für Verbundwerkstoffe GmbH (IVW), Germany

 Advancements in Thermoplastic Composites for Next-Generation Aircrafts: A Study on Topology Optimization and Simulation Methodologies for the design of Door Surrounding Structures by Vinay Nagaraj, Leibniz-Institut für Verbundwerkstoffe GmbH (IVW), Germany

· Wire-shaped inserts for load-appropriate fiber reinforcement of injection-molded thermoplastic components -Development of an innovative process route by Maximilian Rieger, Fraunhofer Institute for Casting, Composite and Processing Technology IGCV, Germany

Use of sustainable resins in composite tidal turbine blades: Pathway to circularity by Ione Smith, University of Edinburgh, United Kingdom

 Development of Tailored Fiber Placement Technology Using the Hybrid Fiber consisted of Poly(xylylene sebacamide) PA XD10 and Carbon Fiber by Keisuke Ito, Mitsubishi Gas Chemical Company, Inc., Japan

 Effect of functionalizing grid-like tape reinforcement structures for injection moulded components by means of 3d printing on shift fixation during mould filling and component properties by Jan Petersen, Aachen Center for Integrative Lightweight Production (AZL) of RWTH Aachen University, Germany

 Investigation of necessary consolidation degree and persisting of energy input during automated fibre placement by Alexander Peitz, Aachen Center for Integrative Lightweight Production (AZL) of RWTH Aachen University, Germany

• Investigation of the mechanical performance of hydrophobised hemp fibres in combination with polypropylene using pull-out tests by Leonie Wesener, Institut für Textiltechnik (ITA) of RWTH Aachen University, Germany

 Aeronautical vitrimer resin for prepreg application by Elena Del Puerto Nevado, Airbus Operations, Spain

 Investigation of Thermoplastic Liners for Cryogenic Hydrogen Storage by Ashley Chadwick, German Aerospace Center (DLR), Germany

 High temperature processing of thermoplastic CF-PEKK laminates in an energy-efficient inductive double belt press by Simon Greive, Aachen Center for Integrative Lightweight Production (AZL) of RWTH Aachen University, Germany

 Leveraging the Behavior of Interfaces in Composites and Coatings for Material Design by Elaheh Sedghamiz, Schrodinger GmbH, Germany

Parasitic Effects of Load Introduction Points in Full-Scale Composite Tidal Turbine Blade Tests by Miguel Angel Valdivia Camacho-1, University of Edinburgh, United Kingdom

• A More Sustainable Cricket Bat: From English Willow to Composite Materials by Fred Zikry, The University of Edinburgh, United Kingdom

 Investigation of the interactions in the consolidation process of thermoplastic natural fibre composite by Lars Wollert, Institut für Textiltechnik (ITA) of RWTH Aachen University, Germany

 Through-thickness fire-retardant distribution influence on fire retardancy properties of glass fibre powder epoxy composites by Arun Alapati, University of Edinburgh, United Kingdom

 Characterization and study of damage mechanisms of infusible thermoplastic and bio-epoxy based composites by Gursahib Singh Bhatia, University of Limerick, Ireland

 Reuse of Carbon Fiber Reinforced Thermoplastic parts by reversalresistance welding in aeronautical industry by Alejandro Marqués Paola, AITIIP Centro Tecnológico, Spain

 Piezoresistive sensors based on epoxy nanocomposites for application as a gauge in exoskeletons by Alberto Jiménez, Universidad Rey Juan Carlos, Spain

• 'Cold Welding': A Novel Technique for Joining Acrylic-Matrix Composite Parts by Machar Devine, University of Edinburgh, United Kingdom

 Manufacturing of closed cfrp cylindrical shells made by tailored fiber placement by Cameron Welker, Leibniz-Institute of Polymer Research Dresden, Germany

 Development of Insert Injection Molding with Composite Additive Manufacturing by Makoto Inomoto, Mitsubishi Heavy Industries, Japan

 Paving the way towards composite sustainable aerostructures inside Clean Aviation FASTER H2 programme by Noelia Salmeron Perez, Airbus Operations, Spain

• Full Scale multi-actuator tidal blade fatigue testing by Sergio Lopez Dubon, University of Edinburgh, United Kingdom

 Healable composites benefits for industrial semi-finished products and aerospace applications by Robin Trigueira, CompPair Technologies, Switzerland

• In-space manufacturing of composite tanks by Ranji Vaidyanathan, Oklahoma State University, USA

38TH STUDENTS SEMINAR 2023

Jury 38th SE Students Seminar 23

Chairman

Christian Weimer, SAMPE Germany

Vice Chairman Charlotte Salaun, SAMPE France

Members

Carwyn Ward, SAMPE UK & Ireland Xoan Xosé Fernández Sánchez Romate. SAMPE Ibérica Matthias Geistbeck, SAMPE Germany Markus Zogg, SAMPE Switzerland Jim Johnson, SAMPE USA Rich Caruso, SAMPE Global

Assistant

Eduardo Gonzalo, SAMPE Ibérica

STUDENT SEMINAR SPONSORS



 Microstructural variability and its effect on mechanical properties of filament wound composites by Shailee Upadhyay, KU Leuven, Belgium

 Thermoplastic Composite Automated T-joint – The design of a fully automatic thermoplastic composite T-joint hot compressed air welding machine by Mauryn de Graaf, University of Twente / TPRC, Netherlands

· Hand-held contact angle measurements for adhesive bonding processes of composites by Franziska Mews, Tampere University, Finland

· Environmental aging tests for bio-material cores in composite sandwich panels by Pauli Hakala, Tampere University, Finland

 Development of optimization tools learning base of the R.Mo.S. Algorithm Application to the selection of ecocompatible substances for use in launcher structures by Fournier Maïlys, Université Claude Bernard Lyon 1, France

• Design and optimization of a tool for implementing composites with high thermal dynamics through the use of metal foams with controlled porosity by Matthis Balthazar, Nantes Université / IRT Jules Verne, France

• Entwicklung eines repräsentativen Volumenelements zur Betrachtung von Schädigungsvorgängen in faserverstärkten Kunststoffen by Martin Giersberg, RWTH Aachen, Germany

 Machine learning algorithms for efficient process optimisation of variable geometries at the example of fabric forming by Clemens Zimmerling, Karlsruhe University, Germany

 Mechanical characterisation of short fibres reinforced polymers with recycled matrices by Arianna Dinosio, Politecnico di Milano, Italy

 Multifunctional composites with 3R (recyclable, repairable and reshapable) properties based on a vitrimeric matrix. by Javier Gómez Sánchez, University Rey Juan Carlos, Spain

 A methodology for fatigue life prediction of a composite tank for liquid hydrogen storage by Narcís Seras Arnau, University of Girona, Spain

 Development of self-healable epoxybased adhesives for wind-turbine blades by Ander Aracama, EPFL / LPAC, Switzerland

 Load introduction elements for FRP sandwich structures with thermoplastic matrix systems by Gabriel Pulver, ETH Zürich / CMASLab, Switzerland

• A Route to Certification of Bonded Thermoset Composite Structures via Resistance Welding by Thomas Maierhofer, University of Bath, UK

• A Novel Profiling Concept Leading to a Significant Increase in the Mechanical Performance of Metal to Composite Adhesive Joints by Adam Whitehouse, Imperial College London, UK

 Dynamic Polymer Networks: Enabling Reprocessable and Recyclable Composites by Levi Hamernik, University of Southern Mississippi, USA



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