Preliminary Programme

sampe
Conference 19 Nantes

Date: 17th - 19th September 2019 **Location:** La Cité des Congrès de Nantes

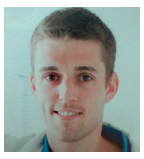
TUESDAY 17 SEPTEMBER

14.00 **Three hours Tutorial 'End-To-End Repair' by Airbus**

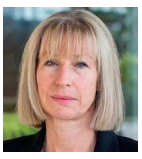
A group of several Airbus experts specialized in repair will come on stage:

• **Introduction to Airbus composites repair initiatives** by Jacinto RODRIGUEZ-SERRANO - Airbus APTL Repair

• **Structural bonded repair embodiment** by Guillaume FERRER - Airbus Embodiment Industrialisation Manager



• **Fuselage spare panel manufacturing** by Denis BOURDY - Airbus Technocentre Prototyping Services



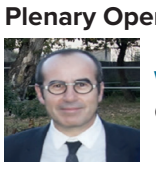
• **Certification and requirements from the Aviation Authorities** by Chantal FUALDES - Airbus Composite Airframe Executive Expert

17.00 Welcome Cocktail & Pre-Registration

WEDNESDAY 18 SEPTEMBER

08.00 **Registration**

09.00 **Plenary Opening**



Welcome by Philippe Briant
Chairman of SAMPE France

Opening by Christian Keun
President of SAMPE Europe

3 Key-note Speakers

François Paynot
Plant Manager Airbus Nantes

Cyrille Collart
Industrial Technologies R&T, Airbus Toulouse

Romain Bigot
R&T engineer, Carboman/Multiplast

10.30 Coffee Break

11.00 **4 Parallel Sessions**

Room 1

MECHANICAL SIMULATION

• *Bio-inspired, self-healing synthetic epoxy foam under cyclic quasi-static compressive loading* by Shunze Cao, University of Nottingham, UK

• *Experimental and numerical exploration of the detailed mechanical response of WrapToR composite truss structures* by Chris Hunt, Benjamin KS Woods, UK

• *Novel Tape Termination method for delamination suppression in tapered composite structures* by Tharan Gordon, University of Bristol, UK

• *Automatic fiber tracing and waviness detection in carbon fiber composite micrographs* by Erik Kramer, TPRC, NL

• *Simulation of crash for composite parts* by Christophe Roua, COGIT COMPOSITES, France

• *Carbon Fiber Reinforced Polymer Straps as Bridge Suspension Hanger Cables* by Danijela Stankovic, Edinburgh university, UK

• *Comparative studies deriving the relationship between weave parameters and mechanical properties in glass/epoxy and carbon/epoxy 3D woven composites* by Monali Dahale, Ulster University, UK

Room 2

INDUSTRIAL INNOVATION

• *Tack and solubility investigations on reactive and non-reactive binder systems* by Florian Helber, University of Stuttgart, Germany

• *Autonomous Composite Production by Robotic Pick & Place* by Alfons Schuster, DLR, Germany

• *Towards a fully automated process chain for the lay-up of large carbon dry fibre cut pieces using cooperating robots* by Dominik Deden, DLR, Germany

• *Water Soluble Mandrels for Lost Core Applications in Manufacturing of Hollow Composite Structures* by jens Kaerger, Aero Consultants, Switzerland

• *In-mold coating via transfer foil for fiber reinforced thermosets in aerospace application* by Joachim Scheller, Fraunhofer IFAM, Germany

• *Automated application of sealant tape: from a basic mechanical system to a robotic solution* by Jan Faber, DLR, Germany

• *Fixation with RTm6 makes preforming for dry fiber placement more economical and avoids influence of additional external material* by Somen Dutta, DLR, Germany

Room 3

THERMOPLASTIC COMPOSITE PROCESSES

• *Performance evaluation of carbon fiber reinforced PEEK tapes prepared by powder impregnation and melt impregnation* by Yingjie Qin, Xi'an Aerospace, China

• *Optimization of in-situ thermoplastic Automated Fiber Placement process Optimization of in-situ thermoplastic Automated Fiber Placement process parameters through DoE* by Patrik Dreher, DLR, Germany

• *A modular concept for thermoplastic composite pressure vessels* by Erik Dahl, TU Darmstadt, Germany

• *Development of a hybrid yarn and pultrusion structure for the improved consolidation and efficient production of thermoplastic matrix composites* by Jeanette Ortega, RWTH Aachen, Germany

• *Investigation of a new characterization technique for anionic polyamide 6 in T-RTM processes by* Rainer Wendel, Fraunhofer ICT, Germany

• *Simulation de procédé pour assister le design d'un cadre de hublot en composite TP fabriqué par procédé QSP®* by Thomas Jollivet, CETIM, France

Room 4

JOINING AND BONDING

• *Non-Destructive Evaluation of the mechanical strength of structural bondings using LASAT* by Tomas Begara, Rescoll, France

• *Composite superstructure bonded to a navy ship steel hull: Characterisation of the wave loads applied on the joint Characterisation of the wave loads applied on the joint* by Luc Mouton, Bureau Veritas, France

• *Numerical study on anchor bolts for load introduction into cross-sectional faces of fiber-reinforced polymer composites* by Jens Klein, TU Darmstadt, Germany

• *Ruag's Approach For A Tailor-Made Hot Bonding Curing Process* by Llamas Carlos Menendez, RUAG, Switzerland

• *Adaptive Heating Solutions to face Contemporary Challenges in Aircraft Composite Repair* by Dr. George Kanterakis, GMI Aero, France

13.0 Lunch

14.00 Winners 34th Students Seminar

14.30 **6 Composite related Plant visits:**

- AIRBUS Site de Nantes
- AIRBUS Technocentre, CETIM & IRT Jules Verne - Nantes
- AIRBUS Site de St Nazaire
- MULTIPLAST - Vannes
- BENETEAU - La Roche sur Yon
- GEBE2 - St Hilaire du Loulay & YASKAWA - Le Bignon

20.00 - 22.30 **Cocktail & Conference Dinner**
NANTILUS – Loire

THURSDAY 19 SEPTEMBER

08.00 Registration

09.00 4 Parallel Sessions

Room 1

BIOBASED MATERIALS AND RECYCLING

- *Recycling of composite materials based on carbon fibers* by Camille Seurat, ELG, UK
- *Enhancing mode 1 inter-laminar fracture toughness of Ti6Al4V/ UHMWPE complete thermoplastic fiber-metal laminates by combining surface treatments* by Logesh Shanmugam, Hong Kong UST, Hong Kong
- *VliesRTM – Reuse of carbon fiber waste in composite structures* by Fabian Albrecht, Fraunhofer ICT, Germany
- *Fatigue Behaviour of Recycled Carbon Fibre Composites* by Karthik Kumar, Oxford Brookes University, UK
- *Recycled Carbon Fibres, A Valuable Reinforcement In Short Fibre Composites* by Alfonso Maffezzoli, University of Salento, Italy

Room 2

INDUSTRIAL INNOVATION

- *QSD, an optimization methodology to use at best tailored preform process* by Denis Espinassou, CETIM, France
- *Key critical parameters for an industrial plasma deposition process* by Gill Scheltjens, Molecular Plasma Group, Luxemburg
- *Evolution of composite aircraft structural parts on example of Vertical Tail Plain (VTP)* by Wilhelm Rombs, Airbus, Germany
- *High-rate manufacturing of aerospace structural parts through compression moulding* by Aurele Bras, Solvay, UK
- *Evaluation of the automated production of a composite rear pressure bulkhead in term of technological and economical aspects* by Thomas Stefani, DLR, Germany

Room 3

SPACE

- *A CF-PEEK Primary Structure for the ATEK Mission Programme* by Ashley Chadwick, DLR, Germany
- *Dimensionally Stable CFRP Grid Stiffened Structures for Space Applications* by Senne Sterk, NLR, NL
- *Flax-based materials in space: example of CAULIBRI project* by Thibault Roumier, SAS LINEO, France
- *Assessment of adhesive performance in space applications* by Premysl Janik, ESA-ESTEC, NL

Room 4

JOINING AND BONDING

- *Dismantling on command of structural bonded joints, a solution for maintenance and end-of life issues* by Maxime Olive, Rescoll, France
- *Experimental and Numerical study on welding technology of thermoset FRP* by Terumasa Tsuda, Toray, Japan
- *Investigation of pre-cured carbon fiber/epoxy-laminates for modified co-curing process* by Nicole Motsch, IVW Kaiserslautern, Germany

PROCESS SIMULATION

- *Manufacturing process simulation for autoclave-produced carbon fiber reinforced polymer sandwich structures* by Benjamin Hailer, Airbus Helicopters, Germany
- *Manufacturing Process Simulation for the Prediction of Tool-partinteraction Manufacturing Process Simulation for the Prediction of Tool-partinteraction and Ply Wrinkling* by Tobias Weber, Airbus Helicopters, Germany

10.40 Coffee break

Room 1

BIOBASED MATERIALS AND RECYCLING

- *Terpene-based epoxide thermosetting resins* by Jerome Claverie, Sherbrooke University, Canada
- *Formaldehyde-free phenolic thermosets for high performance composites* by Romain Tavernier, ICGM Montpellier, France
- *Design, manufacturing and testing of a Safety shoe nose cap from recycled Glass fibre Polypropylene* by Ilse ten Buggecate TPRC NL

Room 2

INDUSTRIAL INNOVATION

- *Automation 4.0 of CFRP Sandwich Structures using Polymer Foams as Core Material for the Aerospace Industry* by Alexander Roth, Evonik, Germany
- *Machine learning for CFRP quality control* by Sebastian Zambal, Profactor, Germany
- *LayupRITE: Manufacturing Support Tools for the Composites Industry* by Carwyn Ward, University of Bristol, UK
- *Composite Wing Box by Liquid Resin Infusion and HiTape®* by Florent Jeanjean, Stelia Aerospace, France

Room 3

AEROSPACE THERMOPLASTIC

- *Thermoplastics for a new generation of aircrafts* by Jean Pierre Cabanac, Airbus Nantes, France
- *Induction Welding of Carbon Fiber Reinforced Additive Manufactured Parts* by Alex Berkel, KVE, NL
- *Cost-effective Out-of-Autoclave Manufacturing of Thermoplastic Panels for Aerospace Structures* by Georg Doll, DLR, Germany
- *Upscaling Resistance Welding - Joining of Carbon Fiber Composites for Full-Scale Aerospace Components* by Manuel Endrass, DLR, Germany

Room 4

PROCESS SIMULATION

- *Resins Synthesis for Carbon Materials* by Chaussoy Nathanael, CEA Le Ripault, France
- *Consolidation sensor for challenging material characterization problems* by Anatoly Koptelov, University of Bristol, UK
- *Numerical modeling of interply adhesion for Numerical modeling of interply adhesion for viscous thermoplastic prepregs forming in Altair RADIOSSTM* by Paris Muleye, Altair Engineering, France
- *Influence of carbon fiber distribution on the thermal expansion coefficient of punctured C/C composites* by Hui-zhen Xie, Xi'an Aerospace, China

12.00 Lunch

13.30 4 Parallel Sessions

Room 1

AUTOMOTIVE MATERIALS AND PROCESSING

- *Production of Bicomponent Thermoplastic-Glass-Fibres in the Nozzle Drawing Process* by Robert Brüll, RWTH Aachen, Germany
- *Pushing the boundaries of carbon fibre sheet moulding compounds: Application to thick automotive components* by Michele Martulli Luca, Toyota Motor Europe, Belgium
- *A novel PU resin system suitable for application in SMC* by Serggej Ilinzeer, Fraunhofer ICT, Germany
- *Process industrialisation for high volume composite part manufacture* by Richard Hollis, Solvay, UK

Room 2

TESTING

- *A reference specimen for compaction tests of fiber reinforcements* by David May, IVW Kaiserslautern, Germany
- *On lay-up solutions for composite plates with high resistance to buckling and postbuckling* by Sergey Selyugin, Airbus, Germany
- *Printed electronics for the functionalization of composite parts* by Alexandre Beigbeder, IPC, France
- *Comparative studies deriving the relationship between weave parameters and mechanical properties in glass/epoxy and carbon/epoxy 3D woven composites* by Monali Dahale, Ulster University, UK

Room 3

AEROSPACE THERMOPLASTIC

- *Double curved thermoplastic orthogrid rear fuselage shell* by Jaap Willem van Ingen, GKN Fokker, NL
- *Robot-based Continuous Ultrasonic Welding for Automated Production of Aerospace Structures* by Lars Larsen, DLR, Germany
- *Processing of PAEK UD tapes for Aerospace structural applications* by Hans Luinge, Toray Advanced Composites, NL
- *Digital manufacturing: turning high-end composites manufacturing systems into 3D printers* by Mattia Di Francesco, Airborne, NL

Room 4

PROCESS SIMULATION

- *Homogenization of Elastic Fiber Inhomogeneity in Linear Viscoelastic Matrix – Comparison of Mean Field and Full Field Method* by Dora Tarkes, ITM/KIT Karlsruhe, Germany
- *Development Of Composites With Complex Architecture For Wind Turbine Blades* by Yoan Bouyer, Cenaero, Belgium
- *Cure monitoring of a BMI resin for enhancing the manufacturing of high-temp composite structures* by Nikos Pantelelis, Synthesites / NLR/ Bombardier, Belgium
- *Large braided hydrofoil development approach* by Thibaut Buns, NCC, UK
- *Resin formulation based on predictive cure kinetics modelling* by Gabriele Voto, Cranfield University, UK

14.50 Tea break

15.30 Closure

POSTER PRESENTATIONS

- *Requirements and performance of high precise functional coating technologies for the Requirements and performance of high precise functional coating technologies for the production of Prepregs* by Andrea Glawe, Kroenert, Germany
- *Development of an automatized preforming process based on filament winding* by Lorenz Wruck, RWTH Aachen, Germany
- *Composite manufacturing supported by simulation* by Ligeia Paletti, NLR, NL
- *Analysis and development of a brazing method to weld carbon fiber reinforced poly ether ketone ketone (CF/PEKK) with amorphous PEKK* by Karola Kotzur, DLR, Germany
- *The way to decrease the curing time by 50% in the manufacturing of structural components using the example of FML fuselage panels* by Philipp Zapp, DLR, Germany
- *Bolt characterization for sandwich composite applications* by Vicky Iliopoulou, Flanders Make, Belgium
- *Properties of pyrolytically recycled carbon fibers and their reuse in composites* by Sarianna Palola, Tampere University, Finland
- *A novel methodology to quantify shape complexities of composite parts* by Mohammad Chowdbury, University of Nottingham, UK
- *Comparison of the shear behaviour of non-crimp fabrics with respect to stitch using the picture frame test* by Likith Krishnappa, University Bremen, Germany
- *Sandwich Composites for Automotive Structures: Comparison of Flexural Rigidity and Damping Behaviour* by Kruttarth Jani, University of Bristol, UK
- *Effective emissivity characterisation and correction for accurate control of Automated Fibre Placement processes* by Philip Druiff, University of Bristol, UK
- *Safe and efficient heating – How to identify the best performing heating method for thermoplastic tape placement* by Ralf Schledjewski, Uni Leoben, Austria
- *CFRP characterisation and damage assessment with eddy current* by Maaik Borst, UAS Amsterdam, NL
- *Fatigue behavior and failure analysis of honeycomb sandwich* by Fahmi Alila, Capacites SAS, France
- *Trapped rubber processing simulation for high performance/high rate processing* by Brina Blinzler, Chalmers University of Technology,
- *Thermal Conductivity and Specific Heat Capacity Characterization of an Out-of-Autoclave Prepreg System* by Muhammed Hasan Arikan, Sabanci University, Turkey
- *A Modelling Of Tow Impregnation For Vacuum Bag Only Process Coupled With Integrated Process Parameters* by Fatih Eroglu, Sabanci University, Turkey
- *Evaluation of Structural Integrity of Composite Lattice Structure with Windows under Compressive Load* by JaeMoon Im, Hanbat National University, Republic of South Korea
- *Advanced simulation of the thermo-stamping of complex composite part* by Christophe Roua, COGIT COMPOSITES, France
- *Overmolded interface on aeronautic composite part* by Christophe Roua, COGIT COMPOSITES, France
- *Knockdown Factors for In-Plane Waviness in Thermoplastic Composites: Recreating Localized Waviness in Test Coupons* by Ramona Sitohang, TPRC, NL
- *Innovative Preform Design Exploiting Automated Fibre Placement* by Petar Zivkovic, University Bristol, UK
- *Optimization of multistep forming process for thermoplastic composite parts - Process parameters and simulation* by Davide Nardi, TU Delft, NL
- *Investigating the effect of stacking sequence and inter-ply friction on forming of non-crimp fabrics over complex curved geometries* by Claudia Jimenez Martin, University of Bristol/ Airbus UK, UK
- *Online Viscosity and Tg Measurement of CFRP manufactured using High-Pressure RTM* by Nikos Pantelelis1, Synthesites / NCC, Belgium
- *Process Induced Residual Stress Modelling of Particle Interleaved Composite Laminates* by Robin Hartley, University Bristol, UK
- *Uniform application of heat for in0situ repairs on composite aircraftstructure using smart susceptor heat blanket technology* by Tom Lane, Heatcon Composite, UK
- *Repair of Damaged Thin Carbon Composite Laminates* by David Jensen, Brigham Young University, USA
- *Customized Reusable High Performance Vacuum Bags for Debulking and Curing of Composite Layups* by Jens Kaerger, Aero Consultants, Switzerland
- *When online and offline processes work hand in hand* by Marc Loegel, SWMS Systemtechnik Germany
- *Development of a High Performance Lightweight SMC Panel* by Kim Dae Su, Chungbuk National University, South Korea