SAMPE EUROPE

CONFERENCE 16 LIEGE

13th - 15th September • Liege, Belgium

OVERVIEW SESSIONS & POSTERS

WEDNESDAY 14 SEPTEMBER

9.10 – 9.35 ***KEYNOTE*** *Outlook of Aerospace R&D and Industry Perspectives in Wallonia,* by Etienne Pourbaix, Skywin, Belgium.

9.35 – 10.00 ***KEYNOTE*** *Ultra-RTM – new AUDI technology to produce cost effective CFRP sandwich parts with short cycle times*, by Günter Deinzer, AUDI, Germany

10.00 – 10.25 ***KEYNOTE*** *Accelerated composite industrialization by advancing materials, processes and simulation tools*, Klaus Ritter, Huntsman Advanced Materials, Switzerland

10.25 - 11.00 **Coffee Break**

11:00 - 12:40

SESSION ROOM 1

Aerospace composites 1

Martin Nagelsmit, NLR , NL

- *Determination of the load bearing capacity of composite flanges for aircraft engine casing application: general methodology and design of testing devices supported by simulation*
  Michael Bruyneel, Gdtech Engineering, BE
- *Design and manufacturing of a safety-critical aircraft krueger flap*
  Michaël Raets, Asco Industries, BE
- *Tuning performance of organosheets by hybridisation*
  Hans Luinge, Ten Cate advanced composites, NL
- *High performance systems for fluid transfer application on commercial aircrafts*
  Damien Sireude, Stelia, FR

SESSION ROOM 2

Manufacturing technologies 1

Leo Muijs, Fokker Technologies , NL

- *Pressure and void evolution during autoclave curing of epoxy matrix composites*
  Alfonso Maffezzoli, University of Salento, IT
- *Correlation of the dielectric properties of an epoxy resin with the degree of cure*
  Amke Eggers, Clausthal University of Technology, DE
- *From stacking sequences to ply layouts: an algorithm to design manufacturable composite structures*
  Samih Zein, Cenaero, BE
- *An integrated virtual tool chain for the simulation of thermoset composite manufacturing processes*
  Frédéric Pascon, Siemens / Samtech, BE

SESSION ROOM 3

Automotive comp. thermosets

Bart Vangrimde, Huntsman, BE

- *Design and Processing of Carbon Fibre Epoxy Resin Moulding Compound Hybridised with Selectively Placed Uni-Directional Reinforcement for Low-cost Automotive Structural Parts*
  Aurele Bras, Cranfield University, UK
- *Evaluation of durability of adhesive joints in sandwich panels*
  Isabel Van de Weyenberg Isabel, Flanders make, BE
- *Factors that contribute to thermoset composite surface quality*
  Eike Langkabel, evonik, DE
- *Addressing the challenges of introducing a novel, cost-effective composite manufacturing process for the high-volume automotive industry*
  Neill Raath, University of Warwick, UK

SESSION ROOM 4

Performance and testing

Wim Van Paepegem, Uni Gent, BE

- *A novel micro-robotic approach to study the environmental degradation of matrix and fibre materials*
  Essi Sarlin, Tampere University of Technology, FI
- *Drop-weight impact response measurement and prediction for quasi-isotropic carbon-epoxy composite laminates*
  Ruben Sevenois, UGent, BE
- *A set-up to measure the transferred multi-axial impact momentum of a bird strike on a booster vane*
  Frederik Allaeys, UGent, BE
- *Effect of inter-laminar defect on skin/stringer delamination in composite stiffened panels*
  Mahoor Mehdikhani, KU Leuven, BE

13.30 18.30 **6 excursions in Liege Area**

TOUR 1 - SONACA HQ – Gosselies (Charleroi)

TOUR 2 - EUROCARBON – Sittard (NL)

TOUR 3 - SABCA LIMBURG – Lummen (Hasselt)

TOUR 4 - Centre Spatial de Liège (CSL) & Coexpair

TOUR 5 - ASCO Industries – Brussels

TOUR 6 - Sirris & Safran Aero Boosters

THURSDAY 15 SEPTEMBER

SESSION ROOM 1

09:00 - 10:40

Aerospace composites 2

Martin Nagelsmit, NLR , NL

- *Is There a Size Limit to Aluminum Mold used for 180°C cure of CFRP Unidirectional Laminates? An 8 meters long SQRTM experience*
  André Bertin, Coexpair, BE
- *Bragg gratings in micro-structured optical fiber as strain sensors for structural health monitoring of fiber-reinforced plastics*
  Thomas Geernaert, VUB Gent/Sirris, BE
- *Assessing the Damage Tolerance of Composite Nacelles*
  Stefanos Giannis, Element Materials Technology, UK
- *Tailored carbon fibers for the next generation of carbon fiber reinforced plastics*
  Gunnar Seide, RWTH Aachen, DE

SESSION ROOM 2

Session on Fibre Metal Laminates

Prof. Rinze Benedictus, TU Delft, NL

- *Space FML, a New Family of Space Materials Properties and Performances of GLARE 1*
  Paul Brand, GTM-Advanced Structures, NL
- *Design optimization methodology for future hybrid wing structures*
  René Alderliesten, TU Delft, NL
- *Investigation of GLARE 2 as Titanium replacement for fuselage crack stoppers*
  Jan Willem Gunnink, GTM-Advanced Structures, NL
- *Automated FML-Manufacturing for High Production Rates in Aerospace Application*
  Hilmar Apmann, Premium Aerotec, DE

SESSION ROOM 3

Automotive comp. thermoplast.

Bert Rietman, Sabic, NL

- *Temperature monitoring of thermoplastic laminates in an automated process chain – potential for enhanced mechanical properties and effective processing*
  Julius Rausch, AUDI, DE
- *The development of a virtual engineering approach to find cost-effective solutions for hybrid composite structures*
  David de Vries, code product solutions, NL
- *Short cycle times for large series – pulpress technology*
  Sivakumara Krishnamoorthy, evonik, DE
- *Testing for tensile rate-dependence in composite laminates*
  Siebe Spronk, Ugent, BE

SESSION ROOM 4

Infrastructure and constructions session

Danny Van Hemelrijck & Prof. Tine Tysmans, VUB. Gent, BE

- *Preliminary Stiffness and Strength based Design and Analysis of a Composite Ampelmann Gangway*
  Koushik Subramanian, TU Delft, NL
- *Flax fibre reinforced polymer in outdoor structures – durability*
  Peter Bosman, Windesheim Zwolle, NL
- *Fiber reinforced composites in construction engineering*
  Anastasios P. Vassilopoulos, EPF Lausanne, CH
- *Long term monitoring of an all-composite water lock using fibre optics*
  Geert Luyckx, COM&SENS, BE

10.40 - 11.10 **Coffee Break**

11.10 - 12.50

Aerospace Repair

Francis Collombet, Uni Toulouse, FR

(this session 6 x 15 min + 10 minutes discussion)

- *Advances on research on inspection techniques at Amsterdam University of Applied Sciences*
  Maaik Borst, HVA, NL
- *Advanced Methodology to Evaluate Design of Large Bonded Composite Repair*
  Laurent Crouzeix, Toulouse University, FR
- *Large repairs – on field large repairs of composite aircrafts*
  Yves-Henri Grunevald, Composites Expertise & Solutions, FR
- *Hexply® m20 prepreg: a material solution for composite repair*
  Steven Jenkins, Hexcel Composites, UK
- *Composite Bonded Repairs Opportunities and Limits*
  Roland Thévenin, RJT Composite Expert, FR
- *Repair Embodiment of an in-service damage to composite structure*
  Guillaume Ferrer, Airbus Group, FR

Manufacturing techn. 2

Leo Muijs, Fokker Technologies , NL

- *Combination of ATL and SQRTM processes in an automated line to produce high performance and high quality integrated composite structures*
  Dimitri Gueuning, SONACA, BE
- *Mechanical properties of a multi-material flexible adhesive joint*
  Laura Gendre, Warwick University, UK
- *Hybrid solutions for joints in carbon composite structures*
  Jos Sinke, TU Delft, NL
- *Additive manufacturing (fdm) of high temperature composite tooling – performance and tool life characterization*
  Timothy Schniepp, Stratasys, USA

Space applications

Javatt Fatemi, Dutch Space, NL

- *The challenge of new launchers: what technology, what for?*
  Guy LARNAC , Airbus Safran Launchers, FR
- *Development of a Composite Solid Rocket Motor Case Demonstrator*
  Ralf Hartmond, MT Aerospace, DE
- *Ultra-thin hybrid organic-inorganic deployable cfrp structures with improved resistance to uv in the space environment*
  Agnieszka Suliga, University of Surrey, UK
- *Composite ring made of 3D woven preform injected by RTM: Coupons and sub-components testing, Preform manufacturing, and parts injection and characterization*
  Bernard Poulaert, SONACA, BE

Energy applications (wind, tidal, oil & gas)

Marcus Kremers, Airborne, NL

- *The Potential of Composite Materials to Enable Radical Innovation in the Subsea Environment*
  Paul Hopkins, Independent Subsea Engineering Consultant, UK
- *Effects of conditioning parameters and test environment on composite materials for marine application*
  Matthew Dawson, Airborne Oil & Gas, NL
- *Material and full-scale testing of offshore thermoplastic composite pipes*
  Erik STAMMES, WMC, NL

12.50 - 13.50 **Lunch**

13.50 - 15.30

Thermoplastic composites 1 (general)

Harald Heerink , TPRC , NL

- *High volume automotive part production from ud tape based composite tailored blanks*
  Rien van den Aker, van Wees ud and Crossply technology, NL
- *Melt impregnation of carbon fibre fabrics by injection moulding*
  Clemens Dransfeld, FHNW, CH
- *Dynamic behavior of aramid and uhmwpe composites using split hopkinson pressure bar*
  Mehmet Karahan, Uludag University Görükle-Bursa, TR
- *Multi materials fusion bonding: effect of chemical treatments on the adhesion strength*
  Chung-Hae Park, Mines-Douai Uni, FR

Manufacturing techn. 3

Leo Muijs, Fokker Technologies , NL

- *The development of a water-soluble core material for manufacturing hollow composite sections*
  Zhaofei Xiao, University of Nottingham, UK
- *Development of a spreading module for the control of the spreading of high modulus fiber tows*
  Lars Appel, RWTH Aachen, DE
- *Evaluation of Delamination Factor in the Drilling of Sandwich Composites through Grey Relational Analysis*
  Abdil KUŞ, Çanakkale Onsekiz Mart University, TR
- *Manufacturing of Novel Embedded Metallic/ Carbon Fibre Reinforced Composite Joint Concepts*
  Lawrence Cook and Andrew Mills, Cranfield University, UK

No autoclave

Christian Weimer, Airbus Innovation, DE

- *Process monitoring as an enabler of next-generation composites manufacturing* Franz Engel, Airbus InFactory Solutions, DE
- *Quickstep's QURE process, a scalable Out-of-Autoclave manufacturing technology*
  Michel Hau, Quickstep, DE
- *New processing routes for out-of-autoclave manufacture of carbon fibers reinforced composites parts*
  Patrice Lefebure, Airbus, FR
- *Thermoplastic composites for future motor cases*
  Brigitte Defoort, Airbus Safran Launchers,, FR

Recycling and LCA

Ben Drogt, EUCIA/Biinc, BE

- *Structural Re-Use of End-of-Life Thermoset Composites*
  Albert ten Busschen, Windesheim Zwolle, NL
- *environmental aspects of recycled carbon fibre composite products*
  Fanran Meng, University of Nottingham, UK
- *Recycling of long fibre thermoplastic composites by low shear mixing*
  Theo de Bruijn, Saxion University, NL
- *EuCIA environmental Impact Calculator for Composite Parts*
  Ben Drogt, EuCIA, BE

15.30 - 16.00 **Tea**

16.00 - 17.40

Thermoplastic composites 2 (general)

Harald Heerink , TPRC , NL

- *Why not thermoplastic composites? There are more polymers out there than just your usual thermosets*
  Niccolo pini, Next Composites, CH
- *Interface strength of overmolded thermoplastic composites*
  Mark Bouwman, TPRC, NL
- *Bicomponent polymer/glass fibres for stamp forming*
  Christoph Schneeberger, Eth Zürich, CH

Automation

Arnt Offringa, Fokker Aerostructures, NL

- *Automated composite production for 3D-shaped series parts in the aerospace industry*
  Raphael Reinhold, Broetje Automation, DE
- *Effects of automated tape laying heating strategies on degree of cure*
  Maria Skandali, TU Delft, NL
- *Automated preforming of a solid rocket motor case in full-scale dimensions using dry carbon fiber products*
  Mona Eckardt, DLR, DE
- *Continuous ultrasonic fiber tacking; breakthrough in effective tape laying and fiber placement*
  Arnt Offringa, Fokker Aerostructures & Jeroen Oosterhof Boikon, NL

Session CFK Valley

Prof. Axel Herrmann, CFK Valley, DE

- *4 Authors to be confirmed*

Bio-composites

Prof. Aart van Vuure, Uni Leuven, BE

- *PowerRibs technology: using natural fiber twist to save weight*
  Clemens Dransfeld, FHNW, CH
- *Novel Cure Systems for Natural Fiber Reinforced Thermosets,*
  Auke G. Talma, AkzoNobel, NL
- *Sustainable Composites: Processing and Applications of Coir Fibres*
  Lucas Ciccarelli,, RWTH Aachen, DE
- *Polyfurfuryl alcohol thermosets resins in fire resistant composite applications*
  Hans E. Hoydonckx, TransFurans Chemicals, BE

17.40 - 18.30 **Farewell**

POSTER PRESENTATIONS

- *Tensile properties of natural and natural/synthetic hybrid fiber woven fabric composites,* Mehmet Karahan and Nevin Karahan, Uludag University Görükle-Bursa, TR
- *Efficiency engine: release agent free manufacturing of composite parts with textured surfaces by flexplas® technology,* Felix Grimm, Infiana, DE
- *Advances in the optimization of stacking sequence of composite structures with continuous design variables,* Michael Bruyneel, Gdtech Engineering, BE
- *Advances in determination of material parameters for functional simulations based on process simulations,* Dennis Otten, Augsburg University, DE
- *Viscosity of carbon nanotube loaded epoxy resin,* Hector Estrada, University of the Pacific, USA
- *Energy absorption investigation of two system composites through quasi-static crushing tests,* Xing Liu, Vu Brussel, BE
- *Energy efficiency and better quality of innovativetechnological processes using smart lab equipment and modern ict,* Dimitar Karastoyanov, Institute of ICT Sofia, BG
- *Flax fibre reinforced polymer bridge deck - sustainability,* Peter Bosman, Windesheim Zwolle, NL