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SAMPE Europe
c/o Mr. Rudolf de Ruijter
de Ruijter Consultancy
PO Box 557
NL-8440 AN Heerenveen
Netherlands

Phone: +31 6 51381263

conference@sampe-europe.org

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Programme

sampe
Conference 25 Amsterdam

Date: 6-7 October 2025
Location: Muziekgebouw aan het IJ - Amsterdam

MONDAY 6 OCTOBER


Aart van Vuure


Rinze Benedictus


Arnt Offringa


Frederic Sicard


Charlotte Salaün

8.00 - 9.00	**Registration**
9.00 - 10.00	**Plenary Opening Session**
9.00	**Welcome**, by Prof. Aart van Vuure, Chairman SAMPE Benelux **Opening,** by Prof. Rinze Benedictus, Past President SAMPE Europe
9.15	**Key-note speaker Thermoplastic composites development in the Aviation in Transition program,** by Arnt Offringa, GKN Fokker, Netherlands 1 **Key-note speaker SOCA – Sustainably Optimised Composite Automotive,** by Frederic Sicard, Jaguar Land Rover, UK 20
9.50	**Presentation Winners** 40th Students Seminar, by Charlotte Salaün, SAMPE Europe
10.00 - 10.30	**Coffee break – Sponsor Exhibition & Poster Presentations**
10.30 - 12.30	**Session 1 - 6 talks**

Room 1

AEROSPACE I

Session chair: Prof. Clemens Dransfeldt, TU Delft, Netherlands

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10.50 • *Influence of Rapid Preforming Approaches on the Mechanical Performance of CFRP Parts* by Lukas Sauerland, Faserinstitut Bremen, Germany 42

11.10 • *Characterising the Thermal Effect of Laser Perforation on Carbon Fibre Reinforced Epoxy Composites for the Aerospace Sector* by Paul Nixon, University of Strathclyde, United Kingdom 54

11.30 • *Self-reinforced Polyaryl Ether Ketone based Foils for Aircraft Insulation* by Maximilian Ritschel, CompriseTec, Germany 66

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12.10 • *Elimination of leakage in 3D printed high performance thermoplastics for hydrogen-based distribution systems* by Florian Fuchs, Helmut-Schmidt-University, Germany 83

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THERMOPLASTICS I

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10.50 • *Crystallization kinetics modeling of CF/LM-PAEK* by Sabrine Bentalib, UTwente, Netherlands 104

11.10 • *Recycled TPC-profiles made from highly aligned rCF thermoplastic tapes* by Christian Garthaus, Herone, Germany 114

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11.50 • *Optimising LA-AFP of Thermoplastics: Comparative Study of Thermal Models and 3D Case Applications* by Denis Cartie, Coriolis Composites, France 132

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AUTOMOTIVE

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10.50 • *Continuous Fiber Reinforcement in Injection Molding - Technology, Challenges, and Potentials* by Eva Kobler, ENGEL Austria, Austria 166

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11.50 • *Innovative Lightweight Solutions for a Sustainable Mobility Sector* by Viktor Reimer, HRC Group, Germany 198

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NDT, TESTING & CHARACTERISATION

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11.50 • *Total Dissipated Energy - Can we relate it to fatigue mechanisms in thermoplastic composites with different fibre orientations ?* by Sofia Sartorio, TU Delft, Netherlands 278

Open Stage

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Session chair: Jörg Kaufmann, TU Chemnitz, Germany

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10.50 •*Closed-Loop Recycled Thermoplastic Carbon Frame: Redefining Performance and Sustainability* by Juan Geerts, REIN4CED, Belgium 289

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13.50 - 15.30	**Session 2 - 5 talks**

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14.10 • *Development of In-Situ Fibreoptical Temperature Measurement Methods for Investigating the Interfacial Bond Strength in Thermoplastic Tape-Reinforced Injection Moulded Components* by Martin Giersberg Sola, IKV RWTH Aachen, Germany 328

14.30 • *Resin Uptake and Its Effect on Fiber Volume Distribution in Wet Filament Winding Laminates* by Jannick Fuchs, IKV RWTH Aachen, Germany 341

14.50 • *Investigation of Fiber Volume Fraction as Key Parameter in Cryogenic Hydrogen Tank Development* by Jonas Appels, DLR, Germany 354

15.10 • *Insights into the thermal oxidation process of epoxy resin systems using a multiscale modelling approach* by Irene Bechis, Schrödinger, Germany 363

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RECYCLING I

Session chair: Siebe Spronk, Syensqo,UK/ Belgium

13.50 • *Lightweight structures with high recycled material content made by hot-cold flow-press-forming* by Markus Zogg, Inspire, Switzerland 377

14.10 • *Valorization of post-consumer waste into thermoplastic composites* by Amandine Codou, TNO - Brightlands Materials Center, Netherlands 392

14.30 • *Recycling thermoset biobased composites: A case study on flax/furan composites* by Lica Boot, TU Delft / Eve Reverse, Netherlands 404

14.50 • *Design and production concept for an aircraft window frame made of rCF tape* by Christian Becker, Leibniz-Institut für Verbundwerkstoffe, Germany 418

Room 3

INDUSTRIAL INNOVATION

Session chair: Guy Larnac, Ariane Group, France

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14.10 • *Net-Shape Carbon Fiber Reinforced Sandwich Structures – 3DMolded Foam Cores Meet Tailored Fiber Placement* by Jascha Schmied, Bionic Composite Technologies, Switzerland and Pascal Büscher, Asahi Kasei Europe, Germany 426

14.30 • *Expanding automation in aerospace: Bridge the gap between AFP and hand lay-up* by Florian Lenz, CEVOTEC, Germany 435

14.50 • *Automated, non-destructive detection of weak adhesions in welded thermoplastic assemblies using laser shock technology* by Vincent Longchamp, Applus+ Rescoll, France 444

15.10 • *SAFRAN Composites – Preparing the next generation of materials and processes for sustainable aviation* by Marc Da Silva, SAFRAN Composites, France 454

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Session chair: Jochen Pflug, Econcore/ThermHex, Germany

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14.10 • *Coexpair SQRTM Process Enables a New Era for Aerospace Honeycomb Structures* by Alexis Gerard, Coexpair, Belgium & Bérénice Remy, Dupont, Switzerland 470

14.30 • *Improvements of thermoplastic honeycomb cores through micro-structured cell walls* by Friedrich Zerling, ThermHex, Germany 485

14.50 • *Local and global buckling of sandwich cell walls in hierarchical sandwich honeycomb cores* by Noah Michel, TU Darmstadt, Germany 497

15.10 • *Influence of Sintering Profile and Density on Dynamic Crush of Glass Foam Core Materials* by Norman Werely, University of Maryland, USA 507

Open Stage

COMP-ECO

Session chair: Prof. Anna Boczkowska, COMP-ECO Scientific Coordinator, Poland

13.50 • *(Chair intro) COMP-ECO project - Joint exploratory research on multifunctional composites and smart structures . Project scope and achievements* by Prof. Anna Boczkowska, COMP-ECO Scientific Coordinator, Poland 517

14.00 • *Embedding carbon nanotube-doped filaments in glass fibre reinforced polymer specimens for strain sensing capabilities* by Evgenia Madia, TU Dresden, Germany 523

14.20 • *Carbon nanotube-doped thermoplastic materials used for structural health monitoring of composite structures* by Kamil Dydek, TU Warsaw, Poland 531

14.40 • *Application of piezoelectric sensors for the development of smart composite structures* by Michal Dziendzikowski, Air Force Institute of Technology, Poland 539

15.00 •*Structural health monitoring for smart aerospace composite structures* by Roger M. Groves, TU Delft, Netherlands 551

15.30 - 16.00 **Coffee break – Sponsor Exhibition & Poster Presentations**

16.00 - 18.00 **Session 3 - 6 talks**

Room 1

MANUFACTURING I

Session chair: Joachim de Kruijk, NLR, Netherlands

16.00 • *General Overview & New Developments in Manufacturing* by Bert Thuis, NLR, Netherlands N/A

16.20 • *DirectPreg® – A Compact and Variable Manufacturing Technology for Production of Customized Near-Net-Shape Prepregs with Tailored Properties* by Björn Riecken, CompriseTec, Germany 560

16.40 • *Improvement of Ultrasonic Weld Strength of CF/Epoxy Laminates and CF/PEEK Rods with PEI/Epoxy Coupling Layer* by Ryunosuke Hashimoto, Kobe City College of Technology, Japan 571

17.00 • *Spatial Prediction Of Laminate Quality In Laser-Assisted Automated Fiber Placement Using Continuous Data Acquisition* by Kilian Seefried, Fraunhofer IGCV, Germany 579

17.20 • *Implementation of vibration into an inductively heated double belt press* by Philipp Wigger, AZL RWTH Aachen, Germany 590

17.40 • *New Particle Finite Element Method Multiphysics Simulation Approach Of Hot Gas Torch To Lower Costs Of Afp/Atl Equipments* by Philippine Delanghe, Coexpair and Samuel Van Hulle, University of Liège, Belgium 603

Room 2

BIO COMPOSITES I

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

16.00 • *Sustainable Composites: Manufacturing and Applications for a Green Future* by Zahra Parhizi, University of Southern Queensland, Australia 627

16.20 • *Enhancing the Moisture Resistance of Flax Fibres via Enzymatic Treatment* by Clare Garing, KU Leuven, Belgium 639

16.40 • *Plastination of Western Red Cedar: A Comparative Study of Synthetic and Biobased Impregnators for Enhanced Environmental Durability and Mechanical Performance* by Madisyn M. Szypula, University of British Columbia, Canada 650

17.00 • *Developing the Supply Chain of Hemp Fibres for Bio-based Composite Applications with Very High Bio-content* by Alexandros Prapavesis, KU Leuven, Belgium 662

17.20 • *Fire resistance and characterization – the aspects of cone calorimetry of natural component reinforced polymer composites* by Mikko Kanerva, Tampere University, Finland 670

17.40 • *Engineering a Sustainable Future: High-Performance Bio-Based Resins Merging Durability, Recyclability, and Eco-Innovation* by Alice Mija, Cote d'Azur University, France 678

Room 3

TOOLING

Session chair: Oliver Bottler, Gradel, Luxemburg

16.00 • *Innovation + Experience = Success* by Bernd Demel, Airbus Helicopters, Germany 692

16.20 • *Innovative Tooling Systems for the industrialization of composite component manufacturing* by David Kampenhuber, ALPEX Technologies, Austria 697

16.40 • *Hybrid rapid tooling for composite manufacturing and injection molding processes* by Matthias Rawa, NXT Technologies, Austria 703

17.00 • *Closed-loop motorsport tooling manufactured using recycled carbon fiber-filled polycarbonate via large-format additive manufacturing* by Tomas Hadrava, Airtech Europe, Luxembourg 713

17.20 • *Toolmaking for composite components - The evolution of back injection tools for high performance thermoplastics* by Maximilian Siebenwurst, Christian Karl Siebenwurst, Germany 720

Room 4

ENERGY

Session chair: Colin Robert, University of Sheffield, UK

16.00 • *Validation of a Thermochemical Model for Thick-Section Thermoplastic Composite Infusions* by Anastasia Tsavea University of Sheffield, UK 726

16.20 • *From blade to post: reshaping wind turbine blade material* by Karel Brans, TU Delft, Netherlands 740

16.40 • *Localization of Shear, Tension and Bending during Forming of Woven Fabric Reinforcements using a New Morphologically Designed Laser-Induced Graphene/PDMS Soft Sensor* by Mohammadamin Amindehghan, The University of British Columbia, Canada 753

17.00 • *Adaptive control of resin flow during manufacture of composite wind turbine blades* by Dan Griffin, National Composites Centre, UK 764

CIVIL ENGINEERING

Session chair: Arsenio Navarro, AIMPLAS, Spain

17.20 • *Revolution in Construction: Composite Materials Transforming the Future of Architecture and Engineering* by Arsenio Navarro, AIMPLAS, Spain 775

17.40 • *Clean Energy Applications Enabled* by Pultruded Composites by Clement Hiel, CSSI New Composite Products Development, USA 791

Open Stage

SPACE

Session chair: Guy Larnac, Ariane Group, France

16.00 • *Innovation in composite technologies to meet the space sector sustainability ambitions* by Ugo Lafont, ESA, Netherlands N/A

16.20 • *Mechanical properties of carbon fiber reinforced composites exposed to cryogenic conditions and space radiation via simulation and testing* by Ranji Vaidyanathan, Oklahoma State University, USA 806

16.40 • *Healable composite structures for tank applications and beyond* by Amaël Cohades, CompPair Technologies, Switzerland 816

40TH STUDENTS SEMINAR WINNERS

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

17.20 • *Best Master Student Presentation*

17.40 • *Best PhD Student Presentation*

18.00 - 21.30 **Happy Hour & Network Event on Boats**

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TUESDAY 7 OCTOBER

8.00 - 8.30 **Registration**

8.30 - 10.00 **Session 4 - 4 talks**

Room 1

MANUFACTURING II

Session chair: Marc Fette, CTC, Germany

8.30 • *Comparison of the energy consumption during the manufacturing process of thermoset and thermoplastic composites* by Jannis Eckhoff, CTC, Germany 828

8.50 • *Automated Ply Placement to manufacture tailored blanks for thermoplastic press forming* by Evan Vruggink, Airborne, Netherlands 840

9.10 • *Development of a pressure sensitive smart roller for thermoplastic Automated Fibre Placement* by Marvin Veil, DLR, Germany 853

9.30 • *HERWINGT GKN Project Overview* by Gijs J. Brouwer, GKN Aerospace, Netherlands 865

Room 2

RECYCLING II

Session chair: Prof. Wim Van Paepegem, UGhent, Belgium

8.30 • *Continuous Thermoplastic Composite Recycling by Low-Shear Extrusion and Compression Moulding* by Ilse ten Bruggencate, Saxion - TPAC, Netherlands 870

8.50 • *Innovation in the Upcycling of Recycled Carbon Fibers for the Production of Staple Fibre Yarns and UD Tapes* by Ivan Domenech Martinez, AITEX Research and Innovation Center, Spain 882

9.10 • *Implementation of Circular Thermoplastic Composites; Practical Aspects* by Winand Kok, SPIRALRTC, Netherlands 893

9.30 • *Engineering research of sustainable polymer formulations for composites: vitrimers and beyond* by Prof. Wim Van Paepegem, UGhent, Belgium 904

Room 3

3D-PRINTING I

Session chair: Lucas Janssen, CEAD, Netherlands

8.30 • *Mechanical recycling for Large Format Additive Manufacturing of autoclave tooling: Tailoring material properties by directly printing with mixed regrind and virgin material* by Bernhard Bauer, TU Munich, Germany 920

8.50 • *Cost-effective large scale 3D printing of continuous fiber-reinforced thermoplastic composites using UD tapes* by Erik Kramer, Saxion | TPAC, Netherlands 931

9.10 • *Investigation of the influence of Printing Parameters on the Thermal Shrinkage Behaviour in an Additive Extrusion Process* by Erik Johannsen, DLR, Germany 941

9.30 • *Mechanical behavior of parts fabricated using composite additive manufacturing compared to metal machining* by Fidel Valega Mackenzie, Brightlands Materials Center/TNO, Netherlands N/A

Room 4

INTERFACES

Session chair: Alex Prapavesis, KULeuven, Belgium

8.30 • *Investigation of the fibre-matrix interface of glass fibre composites exposed to cryogenic temperatures and cryogenic cycling* by Lewis Kelly, University of Strathclyde, UK 952

8.50 • *An Investigation of the material properties and the fibre-matrix interfacial shear strength in glass fibre epoxy and acrylic composites* by Gregory K May-Wilson, University of Strathclyde, UK 962

9.10 • *Investigation of Physical Adhesion in Hemp Fibre Reinforced Composites Using Contact Angle Measurements and Inverse Gas Chromatography* by Sander Van de Vel, KU Leuven, Belgium 973

9.30 • *Double Cantilever Beam test for 3D woven composites* by Christopher Silva, M Wright & Sons, UK 984

Open Stage

NO SESSIONS

9.50 - 10.30 **Coffee break – Sponsor Exhibition & Poster Presentations**

10.30 - 12.30 **Session 5 - 6 talks**

Room 1

HYDROGEN PRESSURE VESSELS

Session chair: Marcus Kremers, Airborne, Netherlands

10.30 • *an analytical framework for the mechanical design of thick-walled hydrogen pressure vessels* by Marie Hondekyn, Ghent University, Belgium 997

10.50 • *Integrated patch-based reinforcement for type 4 hydrogen vessels: from digital modeling to automated manufacturing* by Luisa Kirsch, Technische Hochschule Augsburg, Germany 1008

11.10 • *Filament-based seals for hydrogen applications* by Louisa Kolfen, Faserinstitut Bremen, Germany 1021

11.30 • *Full-Scale Manufacturing of a hybrid thermoset/thermoplastic Tank for cryogenic Fuel Storage* by Dominik Deden, DLR, Augsburg, Germany 1031

11.50 • *Parametric, multiscale analysis and comparison of filament wound repeating unit cell geometry against laminated unit cells accounting for structural defects* by Marcus Welsh, ITA RWTH Aachen, Germany 1040

12.10 • *Investigation of safety kinematics for high-pressure CFRP hydrogen tanks in the underbody of a vehicle under side POle crash* by Marlies Springmann, University of Stuttgart, Germany 1056

Room 2

THERMOPLASTICS II

Session chair: Sebastiaan Wijskamp TPRC, Netherlands

10.30 • *Optimization of the Manufacturing Process and Tensile Characterization of Carbon Fiber-Reinforced PEEK Panels Produced from Unidirectional Tapes* by Javier Ramírez Conca, AIMPLAS, Spain 1068

10.50 • *Tailoring Thermoplastic Tape Properties Through Compaction* by Hanisa Hasrin, The University of Sheffield, UK 1079

11.10 • *Development of TP wing ribs assembled with infrared welding technology* by Martin Denize, DAHER Aerospace, France 1094

11.30 • *Powder Impregnation Behavior on Injection Molding Process Inserted by CFRTP Semipreg Sheets* by Seiran Murata, Kindai University, Japan 1103

11.50 • *Thermo-mechanical properties of carbon-paek laminates at cryogenic temperature* by Adli Dimassi, Faserinstitut Bremen, Germany 1112

12.10 • *Optimization of CF/Epoxy-PEEK Bonding: Effects of Plasma Oxygen Content and Process Temperature on Fracture Toughness* by Henri Perrin, Luxembourg Institute of Science and Technology, Luxembourg 1124

Room 3

3D-PRINTING II

Session chair: Lucas Janssen, CEAD, Netherlands

10.30 • *Additive manufacturing of fibre-reinforced plastics - optimised carbon structures in different variants* by Paul Zachäus, ITA RWTH Aachen, Germany 1134

10.50 • *Characterization of fiber materials and treatments for continuous carbon fibre-reinforcement in a novel laser-sintering process* by Simon Zeidler, Karlsruhe Institute of Technology, Germany 1144

11.10 • *Effect of Interlayer Temperature Control on Interlayer Strength for Large Format Additive Manufacturing of High Performance Thermoplastics* by Ana Ramirez, NLR, Netherlands 1156

11.30 • *Development of sustainable composite materials for automated manufacturing processes - 3D printing & AFP* by Pedro Pereira, Technology Innovation Institute, United Arab Emirates 1168

11.50 • *Process Optimization of a Subsequent Short-Carbon-Fiber Injection in Stereolithographically Manufactured Hollow Structures* by Dominik Platzer, IFB Institute of Aircraft Design University of Stuttgart, Germany 1179

12.10 • *Reflections: Which barriers for adoption do we need to break down for 3D printing in composites to truly scale?* by Lucas Janssen, CEAD, Netherlands N/A

Room 4

DESIGN & MODELING

Session chair: Prof. Wim van Paepegem, UGhent, Belgium

10.30 • *A Novel Method for Quantitative Assessment of Process-Induced Defects in Uncured Composite Materials* by Philip Druiff, National Composites Centre, UK 1191

10.50 • *Characterization and modeling of ply-ply friction for unidirectional thermoplastic tapes in melt* by Rens Pierik, TPRC, Netherlands 1202

11.10 • *An Information Model for Automated Generation and Process Control of Variable Stiffness Laminates in Automated Fiber Placement* by Raphael Höfer, Helmut-Schmidt-University / CTC, Germany 1214

11.30 • *Multiscale Computational Analysis of Fiber Undulation Effects on the Shear Properties of Carbon Fiber-Reinforced Plastics* by Armin Farzin, TU Chemnitz, Germany 1226

11.50 • *Finite Element Analysis of Composite Overwrapped Pressure Vessels for Hydrogen Storage: A Study of Solid vs. Shell Element* by Nazim Ali, Ghent University, Belgium 1238

12.10 • *Experimental Characterisation and Numerical Simulation for Compression Moulding of Continuous and Discontinuous Fibre Hybrid Architecture Composites* by Connie Qian, University of Sheffield, UK 1249

Open Stage

NO SESSIONS

12.30 - 14.00 **Lunch – Poster Presentations & Exhibition of sponsors and Table Tops**

14.00 - 16.00 **Session 6 - 6 talks**

Room 1

MANUFACTURING III

Session chair: Sebastian Bühler, Biontec, Switzerland

14.00 • *Graded Fiber Volume Content in Laser-Assisted Tape Placement: Processing Strategies, Machine Requirements, and Characterization* by Michael Emonts, AZL RWTH Aachen, Germany 1258

14.20 • *Tailored Fibre Placement for sustainable high-performance composite manufacturing* by Anna Mavilla, Bercella, italy 1269

14.40 • *Optimizing Machining Methods for Carbon Fiber Composites: CNC, Waterjet, and Surface Grinding* by Rahmah Saswiandari Trisolicha, Purdue University, USA 1281

15.00 • *Development of Hybrid Joining Process Combining Ultrasonic Welding and CFRTP Rivet Fastening* by Daiki Tanabe, Kobe City College of Technology, Japan 1293

15.20 • *Conexus technology – welding instead of bonding: A paradigm shift in lightweight design* by Dominik Kuttner, NXT Technologies, Austria 1304

15.40 • *Isothermal RTM in Aerospace? How to increase productivity safely using intelligent monitoring.* by Nikos Pantelelis, Synthesites, Belgium 1314

Room 2

ARTIFICIAL INTELLIGENCE AI

Session chair: Maximillian Holland, Fraunhofer IGCV, Germany

14.00 • *Artificial Intelligence in Composites Engineering and Manufacturing* by Maximillian Holland, Fraunhofer IGCV, Germany 1325

14.20 • *Real time flowfront tracking of liquid composite moulding processes with machine learning approaches* by David Droste, Faserinstitut Bremen, Germany 1334

14.40 • *Natural Fiber Reinforced Plastics Characterization Through Neural Networks, Tackle of Small Training Dataset* by Ava Chavoshi, TU Chemnitz, Germany 1345

15.00 • *Machine Learning Integration in Composites Manufacturing based on Automated 3D Defect Detection System* by Yagna Jadeja, Airborne Composites, City University of London and University of Leeds, United Kingdom 1356

15.20 • *"Segmentation Supervised Multi-Head Defect Classification of Virgin and Recycled Carbon Fiber Material in Photometric Stereo Images"* by Abhiram Kolli, Profactor, Austria 1372

15.40 • *The pathway to developing a validated algorithm for automated liquid flow front detection and permeability evaluation* by Jamin Daniel Vincent, National Physical Laboratory, UK 1383

Room 3

WELDING, JOINING & BONDING

Session chair: Pierre Rouch, DAHER/ KVE, France

14.00 • *Joining technologies combining CFRPs and 3D metal anchors for aeronautical structural parts: Case study- Vertical stabilizer* by Evanthia Pappa, Leonardo, Italy 1394

14.20 • *Quantifying Tool Path Deviations in Robotic Continuous Ultrasonic Welding of Thermoplastic Composites* by Sungi Han, SAM XL (TUDelft), Netherlands 1404

14.40 • *Induction welding technology for thick composites* by Ozan Erartsin, NLR, Netherlands 1416

15.00 • *Assessing weld quality in continuous ultrasonic welding of thermoplastic composites via in-situ monitoring* by Johan van Stuyvesant Meijen, SAM XL (TUDelft), Netherlands 1429

15.20 • *Discontinuous Induction Welding of Hybrid Steel-Fiber Reinforced CFRP Composites* by Thomas Neumeyer - Leibniz-Institut für Verbundwerkstoffe, Germany 1440

15.40 • *Enhancing the shear strength of hybrid titanium-composite joints by out-of-plane protrusions* by Wessel Wits, NLR, Netherlands 1450

Room 4

FIBERS & RESINS

Session chair: Alberto Lario Cabello, Toray Advanced Composites, Netherlands

14.00 • *Model-free kinetic analysis of bio-based furan resins: impact of blocked vs. unblocked PTSA catalyst* by Denise Hellmuth, University of Bayreuth, Germany 1460

14.20 • *Development of novel Hybrid MAX-Phase-Ceramic Carbon Fibres for High-Performance Application* by Kumar Jois, ITA RWTH Aachen, Germany 1469

14.40 • *Data driven modeling of PEEK modulus for advanced process simulations* by Yannick Schäfer, DLR, Germany 1480

15.00 • *Dynamic epoxy-amine networks: towards circular composite structures* by Marko Barbaric, Polymer Competence Center Leoben, Austria 1492

Open Stage

NO SESSIONS

16.30 - 17.30 **Plenary Closure**

16.30 **"The History of Composites: seven breakthrough innovations"** by Prof. Ignaas Verpoest, Composite Materials Group, KU Leuven, Belgium 1503

17.00 **Multiple Choice Quiz & Plenary discussion** "What could be the 8th breakthrough that`s coming?" Moderator TBC

WEDNESDAY 8 OCTOBER

7.15 - 14.30	**Plant Visits - Lunchbox included**,** Transport by bus Muziekgebouw - Company Location vv.
7.15 - 14.30	Toray Advanced Composites(TAC) Nijverdal
7.15 - 14.30	GKN Fokker Hoogeveen
8.00 - 14.30	NLR Marknesse
8.00 - 12.30	Airbus DS Oegstgeest - ** no lunchbox
8.15 - 14.00	SAM XL Delft & TU Delft
8.15 - 14.00	Airborne & KVE-Daher Ypenburg

POSTER PRESENTATIONS

CLUSTER 1
SUSTAINABLE MATERIALS AND RECYCLING

Focus on sustainable, bio-based, and recycled materials for composites and environmental impact mitigation.

- *Low Carbon Footprint, Ultra-High Thermal Resistance Inorganic Matrix Composites Materials with Simplified Processing Characteristics* by Alessandra Ciappa, NanoTech, Italy 1532
- *Advancements in the Reuse and Recycling of Post-Industrial Composite Manufacturing Waste* by Richard Groves, WMG - The University of Warwick, UK 1541
- *reTPC: a sustainable recycled material for injection molding* by Ali Rezaei, Brightlands Materials Center-TNO, Netherlands 1542
- *Advancements in Bio-Based Epoxy Resins for Sustainable Aerospace and Energy Applications* by Christopher Gardel, Schill+Seilacher "Struktol", Germany 1543

CLUSTER 2
TESTING, INSPECTION & SENSING

Encompassing vision systems, AI, sensor integration, novel test methods and digital manufacturing/inspection techniques.

- *Development of a test rig for investigating the drapability of cover layer textiles in the production of sandwich components during molding using particle foam* by Justus Wiedenhoff, ITA RWTH, Germany 1556
- *Vision-Based Multimodal 2D and 3D Inspection System for Large Composite Aerostructures* by Wolfram Walenta, Profactor, Austria 1564
- *Vision-based automated inspection of flax fibre orientation* by Matteo Merlo, Profactor, Austria 1573
- *Artificial neural networks in fibre reinforced composites - Efficient usage of small amounts of prevailing data* by Marie Hadenfeldt, IKV RWTH Aachen, Germany 1585
- *Fatigue testing methods for acceleration on the prediction of the fatigue life stresses* by Margherita Donnici, AIMPLAS, Spain 1594
- *Evaluating Resin Flow in Natural Fibre Prepregs Using Image Analysis Techniques* by Aakash Sahu, TU Chemnitz, Germany 1595
- *Efficient fatigue life assessment of composite structures based on constant life diagrams and multiaxial fatigue failure criterion* by Yuanyuan Wang, Hexagon, Netherlands 1604

CLUSTER 3
PROCESSING, FORMING & MANUFACTURING INNOVATIONS

New techniques and process optimization in forming, layup, and composite manufacturing.

- *Efficient Production of Structural Composite Components for Aviation - Project ELECTRA* by Feiyun Zhang, Fraunhofer ICT, Germany 1605
- *Designing fiber lay-out for continuous fiber additive manufacturing* by Tessa ten Cate, TNO - Brightlands Materials Center, Netherlands 1622
- *Investigation of the forming properties of thermoplastic natural fibre semi-finished products in the vacuum deep-drawing process* by Agata Ryzewska, ITA, RWTH Aachen Univeristy, Germany 1623
- *Machining a flax fibre composite using tools with different geometries.* by Jan Zouhar, Brno University of Technology, Czech Republic 1635
- *The effect of variability of interface friction on the wrinkle generation during the diaphragm forming process* by Yilong Li, University of Cambridge, UK 1646
- *Quick permeability properties assessment for AFP-RTM based on CFD simulations* by Francisco Serrano Alcalde, Aragón Institute of Technology, Spain 1658
- *Manufacturing of high-temperature polyimide CFRP tape via water-based slurry* by Alex Brahinets, The University of Sheffield AMRC, UK 1668

CLUSTER 4
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- *Multi-Scale Modelling of Process-Induced Residual Stresses in Fibre-Reinforced Semi-Crystalline Thermoplastic Composites* by Jan-Lukas Stüven, TU Braunschweig, Germany 1677
- *Characterizing Thermoplastic Shape-Memory Polymers for Mold Design: From Material Testing to Viscoelastic Modeling* by Fabian Neumann, DLR, Germany 1678
- *Connection design of multifunctional elements in the primary structure* by Dustin Gesang, DLR, Germany 1693
- *A Parametric Approach to Investigate the Effect of Textile Architecture on Permeability* by Gaurab Sundar Dutta, Institute of Polymer Materials and Plastics Engineering, Clausthal University of Technology, Germany 1706
- *Digitalisation of Hydrogen Tank Production Line* by Vinzent Alexander Grün, ITA RWTH Aachen, Germany 1717

CLUSTER 5
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New developments in resin chemistry, curing processes, additives, and flame retardants.

- *Influence of flame retardants for the anionic polymerization of polyamide 6 (aPA6) as matrix for FRTPs* by Hannah Decker, Fraunhofer ICT, Germany 1726
- *Reaction Mechanism of Epoxy-Imidazole Resins and Silica-Induced Delay* by Yoshitomo Furushima, Toray Industries Europe, Germany 1738
- *Carbamate as a Sustainable Blowing Agent for Epoxy Foams with Industry-Relevant Processing Times* by Lukas Endner, University of Bayreuth, Germany 1747
- *Optimisation of VARTM Composites with Different Multifunctional Epoxy Resin Systems* by Anil Marmara, The University of Sheffield, United Kingdom, UK 1757
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- *Comparison of different thermoplastic impregnation methods for flax fibres and PA11* by Lars Wollert, ITA RWTH Aachen, Germany 1784
- *Cost-effective production of large-scale thermoplastic GFRP storage tanks* by Allard Braakhuis, Saxion | TPAC, Netherlands 1793
- *FlexCycle: Turning thermoplastic composite waste into functional products* by Fidel Valega Mackenzie, Brightlands Materials Center - TNO, Netherlands 1806
- *PulBraiding and Bending of Continuous Fiber Reinforced Thermoplastic Composites* by Cassandra Bauer, Fraunhofer IGCV, Germany 1815
- *Fabrication of Unidirectional Thermoplastic Pultruded Profiles with Integrated Continuous Sensing* by Jaime Lozano Barrachina, AIMPLAS, Spain 1827
- *ZnO nanoflakes grown on carbon fiber surface using ultrafast and facile microwave assisted method for polyetherimide based thermoplastic laminates* by Akshay Sunil Salvi, Indian Institute of Science, Bangalore, India 1828

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- *Printed electronics in sustainable composite materials for automotive applications* by Javier Alias, NAITEC, Spain 1841
- *Development of carbon fiber reinforced sandwich core structures for cryogenic hydrogen storage* by Tim Vosmer, ITA RWTH Aachen, Germany 1842

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- *Is there Hornification in both Technical and Elementary Flax Fibres after High-Low Humidity Cycling?* by Clare Garing, KU Leuven, Belgium 1854
- *Repetitive Mechanical Recycling of Carbon Fibre Reinforced Polyphenylene Sulphide* by Ilse ten Bruggencate, Saxion/TPAC, Netherlands 1855
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- *Novel textile reinforcements with integrated textile-based in-situ sensors for the reinforcement of existing concrete structures against short-term dynamic events* by Hung Le Xuan, TU Dresden, Germany 1858
- *Investigation of non-destructive testing methods for the characterization of particle-filled fiber composites* by Marcel Littig, Stuttgart University, Germany 1859
- *Development of a process window for debondable adhesives in composite sandwich structures* by Jean-Baptiste Desbrest, EPFL, Switzerland 1860
- *Circular Design for Lightweight Structures made of Fibre Reinforced Polymers* by Florian Langenegger, ETH Zürich, Switzerland 1861
- *Hypervelocity Impact Simulation in Composite Materials* by Roberto García-Cid Sánchez, TU Madrid, Spain 1862
- *Surrogate modeling of the mechanical behaviour of structural composites* by Radouan Bouallala, TU Madrid, Spain 1863
- *Manufacturing of Thermoplastic Composite Sandwich Panels using Induction Welding under Vacuum* by Romain G. Martin, École de Technologie Supérieure (ETS) Montreal, Canada 1864
- *Engineering the Aeronautical Composites of Tomorrow: Mechanical Performance at High Temperature and Under Flame* by Julie Vacandare, INSA Rouen, France 1865
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- *Evaluating Temperature Dependence and Repairability in Vitrimer Matrix Composites* by Lorenzo Di Marco, Politecnico Milano, Italy 1868
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