

with friendly support of:

International Congress

June 19 - 20, 2024, Mannheim, Germany



# **Top topics**

- Exterior: Solutions made from Honeycomb sandwich material, Natural fibers and recycled Polypropylene
- Interior: Use of additive Manufacturing with sustainable Materials, New PP foam Technologies and Recyclates
- Circular economy: Impact of the ELV Directive, mechanical and chemical Recycling, securing raw Materials
- Manufacturing processes: Functionally integrated particle foam Applications, overmolded electronics, finishing Technologies
- Materials: Upcycling for ABS, Plastics for Electromobility, use of Wood and Cellulose fibers

# Your benefits

- Industry meeting-point with 80 exhibitors
- 47 hand-picked Keynotes & Lectures
- 15 OEM Lectures
- Auto show
- Big EM Public Viewing: Germany vs. Hungary



An event organized by VDI Wissensforum GmbH • www.piae-europe.com • Phone +49 211 6214-201 • Fax +49 211 6214-154

# VDI Initiative – Meet OEMs in Mannheim!

# PIAE – THE platform for Plastics in Automotive Engineering

For over 40 years, the international VDI Congress PIAE has been the most important industry meeting place worldwide for all those involved in the field of Plastics in Automotive. Representatives from the entire value chain, from raw materials to tools and machines to the finished product part, meet in Mannheim every year to discuss the latest developments.

The high proportion of OEM participants in particular makes this Congress so important for the industry. With the help of our program committee as well as the supporting panel of experts, we have launched the initiative "Meet OEMs in Mannheim" and thus once again identified the right participants from the automotive manufacturers and invited them personally. In 2024, over 20% of the congress participants will once again be experts from AUDI, BMW, Mercedes-Benz, Ford, Opel, Porsche, Renault, MAN, Scania and Volkswagen.

# The participants - Who will you meet?

Participants by industry		Function
Raw material 31 %		Project management/Engineer R&D 39 %
Tier 1 26 %		Project management/Group management 27 %
OEM (Vehicle manufacturer)		Management/Division management
Tools/Machines		Technical Sales/Product Management 9 %
Consulting/Research/Others 8 %		Research 3%
Testimonials:		
<b>"Participation of many OEMs shows the development momentum towards sustainability.",</b> Jürgen Gugg, BMW A	"I like the high level of technical things presented during the 2 days. Very interes- ting and relevant application shown for automotive mass production application.", Guillaume Gardère, Valeo Thermal Systems	<b>"Everything was very well organized. V</b> interesting topics!", Avshalom Ben Ami, Polyram plastic industries LTD
"It was a very successful event that excee- ded my expectations by far – I would very much like to do it again repeat.", Ingo Fliege, Volkswagen AG	<b>"Good distribution of lectures and oppor-</b> tunities for discussion.", Denis Eschwey, Volkswagen AG	<b>"Networking is always good at the PIAI</b> Uwe Kolshorn, Kunststoff-Institut für die mittelständische Wirtschaft NRW GmbH





**"Great programme, great organization. Plenty of time for discussion.",** Daniel Kugele, Robert Bosch GmbH

**"Good organization, good event technology, interesting lectures and exhibition, very good opportunity for networking.",** Lothar Egersdörfer, Webasto Roof & Components SE

# PIAE 2024 | Program overview

Wednesday, June 19, 2024 – 1st day of Congress

				Mozartsaal (Level 0)		
08:50	2.2.2.2	Keynotes				
10:30	Coffee break	with visit to the exhibition & Auto show				
		Mozartsaal (Level 0)		Musensaal (Level 1)		Stamitzsaal (Level 1)
11:15		Exterior		Circular Economy		Interior
13:15	Lunch break	with visit to the exhibition & Auto show				
15:00	2	Use of sustainable materials	X	Manufacturing Processes 1	°¢	Simulation
16:00 Coffee break with visit to the exhibition & Auto show						
16:45		Materials 1	$\bigcirc$	Use of Recyclates 1	2	Sustainability 1
ab 17:45		PIAE Networking Party with European Champions	hip public vi	ewing (Germany vs. Hungary) in the trade exhibition	and the Eva	a and Sepp Herberger Lounge

Thursday, June 20, 2024 – 2nd day of Congress					
	Mozartsaal (Level 0)		Musensaal (Level 1)		Stamitzsaal (Level 1)
09:00	Lightweight Design		Use of Recyclates 2	X	Manufacturing Processes 2
11:00 Coffee break	with visit to the exhibition & Auto show				
11:45 🔀	Manufacturing Processes 3		Odor in Vehicle Interior		Materials 2
12:45 Lunch break with visit to the exhibition & Auto show					
			Mozartsaal (Level 0)		
14:00 ど	Sustainability 2				
15:00 Closing wor	ds				
15:15 End of the c	ongress				

# Wednesday, June 19, 2024 | 1st day of Congress

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# Mozartsaal (Level 0)



# Wednesday, June 19, 2024 | 1st day of Congress

<ul> <li>11:45 Vehicle Underbody Components Made of Natural Fibers and Recycled Polypropylene for Future Integration in Electric Vehicle Platforms <ul> <li>Batterie Electric Vehicles, Underfloor Components, Underbody</li> <li>Biobased Materials, Natural Fibres, Polypropylene, Post Consumer Recycling, LWRT</li> <li>Sustainability</li> <li>Material Development</li> </ul> </li> <li>DiplIng. Fabian Groh, Project Manager Pre-development, Develop- ment Cultivation system, AUDI AG, Neckarsulm and DiplIng. Moritz Micke-Camuz, Research associate, Application Center HOFZET, Fraunhofer Institute for Wood Research, Wilhelm-Klauditz-Institut WKI, Hannover, Co-authors: Robert Apfelbeck, AUDI AG, Neckarsulm, Dr. Thomas Reußmann, TITK, Rudolstadt</li> </ul>	<ul> <li>Addressing the circularity challenge of the new EU end-of-life vehicles regulation: post-consumer recycled PP for high end automotive interior applications</li> <li>The new EU End-of-Life Vehicle Regulation</li> <li>Mechanical recycling of post-consumer plastic waste streams</li> <li>Qualification of mechanical recycled Polypropylene for automotive interior applications</li> <li>Recyclability of recycled content materials</li> <li>DiplIng. Georg Grestenberger, Application Marketing Manager – Automotive Interior, Mobility, Co-authors: Dr. Daniela Mileva, Dr. Markus Gall, Gisela Lehner, M.A., all of Borealis Polyolefine GmbH, Linz, Austria</li> </ul>	<ul> <li>Lightweight Design Innovation: A Case Study of 20 % Weight and CO<sub>2</sub> Emission Reduction in Door Panels</li> <li>Lightweighting in injection molding</li> <li>Chemical Foaming</li> <li>Interior trim (door panels)</li> <li>Carbon footprint reduction</li> <li>Patrizia Scholz, Business Development Manager, Colors, Additives and Inks, Avient Corporation, Ahrensburg and Ivan Guinea, M. Sc., Materials Development Engineer, Doors &amp; Hard Trim BU, Antolin Group, Burgos, Spain, Co-author: Laura Carrillo, Avient Corporation, Barcelona, Spain</li> </ul>
<ul> <li>12:15 Polycarbonate based Roof Sensor Module for automated driving         <ul> <li>Functional requirements and resin selection</li> <li>Part design, Injection Compression and process optimization</li> <li>Function integration</li> <li>Module realisation</li> </ul> </li> <li>DiplIng. (FH) Christoph Klinkenberg, Global Technical Marketing Mobility Exterior, Covestro Deutschland AG, Leverkusen and Ing. Magnus Sviberg, Director Research and Development, Webasto Roof &amp; Components SE, Stockdorf, Co-author: Dr. Rainer Hagen, Covestro Deutschland AG, Leverkusen</li> </ul>	<ul> <li>The Post-Consumer-Dilemma – The ELV-Regulation from the perspective of a medium-sized recycling company of Engineering and High Performance Plastics!</li> <li>Mechanical Recycling</li> <li>ELV-Regulation – PIR and PCR</li> <li>Engineering plastics /High Performance plastics</li> <li>Recyclates</li> <li>Kai Zies, M. Sc., CEO, MKV GmbH Kunststoffgranulate, Beselich-Obertiefenbach</li> </ul>	Sustainable and light-weight interior ducts: new possibilities with ultra-low density PP foams Incumbent interior ducting solutions Ultra-low density PP foaming technology Concept study PP foam duct Sustainability outlook DiplIng. Markus Kralicek, Business Development Manager, Mobility, Borealis Polyolefine GmbH, Linz, Austria and Andrew Simpson, B. Eng., NVH Technical Manager, AER Stafford Ltd., Norton Canes, United Kingdom, Co-author: Steven Thielemans, Jiffy- Abriso Group, Wellen, Belgium
<ul> <li>12:45 Highlights of the plastic carrier in the grey area of the active rear spoiler system <ul> <li>Highlights of the new rear spoiler concept</li> <li>Requirements for a visible component in the grey area of the rear spoiler</li> <li>Weight reduction and optimisation of surface quality through MuCell technology</li> <li>Enhancement of the surface with a 3D laser texture</li> </ul> </li> <li>Thomas Hübener, M. Sc., System Engineer, Dr. Ing. h.c. F. Porsche AG, Weissach</li> </ul>	<ul> <li>Transforming Resources for a more connected, sustainable World</li> <li>Securing raw materials</li> <li>Saving polymer</li> <li>Reduction of CO<sub>2</sub></li> <li>Reaching the goal together</li> <li>Marc Kochhan, Head of Research and Development &amp; Sales, Ecobat Resources Germany GmbH, Braubach</li> </ul>	<ul> <li>Industry-first use of a 25 % mechanically-recycled post-in- dustrial polypropylene in a safety-critical dashboard carrier application</li> <li>Dashboard carrier in LGF PP</li> <li>Use of mechanically recycled post-industrial PP</li> <li>Material development and specifications</li> <li>Evidence of application performance</li> <li>Geert-Jan Doggen, Senior Business Manager, SABIC, Bergen op Zoom, The Netherlands and Stephanie Rodgers, former Director of Sustainable Materials Engineering at Fisker Inc., Manhattan Beach, CA, USA</li> </ul>
13:15 P Lunch break with visit to the exhibition & Auto show		
Mozartsaal (Level 0)	Musensaal (Level 1)	Stamitzsaal (Level 1)
Use of sustainable materials Moderation: Robert Someschan, Ford-Werke GmbH	Manufacturing Processes 1	Simulation
<ul> <li>15:00 Skoda show car sustainable materials</li> <li>Show car based on Skoda Enyaq</li> <li>Sustainable materials</li> </ul>	Innovative production solutions for function-integrated ther- moplastic particle foam applications for interior and exterior applications	THERMOFIP: A new era for the automotive cooling market thanks to optimized simulation of the effects of water and glycol-based coolants on parts for their entire lifespan

- Use of recyclate
- Reduction of CO<sub>2</sub> footprint

**Dr. Dalibor Kopáč,** Coordination of the sustainable materials development and Dipl.-Ing. Radek Havlík, Head of sustainable materials development, both of Škoda Auto a.s., Mladá Boleslav, Czech Republic

- Fiber reinforced polyamides
- Coolant
- Aging
- Materials modeling
- Simulation

Dr. Gilles Robert, Senior Materials Expert, Application Center, DOMO Engineering Plastics Europe Spa, Arco, Italy

- Recycling-compatible cover layers (Class A components)
  Functional integration in particle foam components
- Tool technology
- Machine technology

Heinz Hohensinner, Sales & Project planning application technology, Competence Center Plastics, Fill Gesellschaft m.b.H., Gurten, Austria

# Wednesday, June 19, 2024 | 1st day of Congress

# 15:30 Implementation of Sustainable Materials in Body Interior

- Motivation for Implementing Sustainable Materials
- Classes of Sustainable Polymers
- Analysis of latest EU-Regulations
- Timeline for Future Implementation

Dipl.-Ing. (TH) Werner Jakobs, Manager Interior Systems & Interior Components, Body development Vehicle interior and Dipl.-Ing. Norbert Klar, Technical specialist, Body development Vehicle interior, both of Ford-Werke GmbH. Cologne

# Mantara: Stay competitive with a 70 % reduction in clamping force due to thermoplastic foaming

- Reduction in clamping force
- Material savings
- CO<sub>2</sub> balance comparison
- Examples

Roger Kaufmann, CEO, GK Concept GmbH, Dresden and Dipl.-Ing. (BA) Manuel Wöhrle, Manager of Industries, Applications & Industries, ARBURG GmbH + Co KG, Lossburg, Co-authors: Dipl.-Ing Sebastian Pirl, Dipl.-Ing Philipp Hammer, both of GK Concept GmbH, Dresden

# Simulation and characterisation of moisture-dependent properties of polyamide 6 in technical components

- Concentration-dependent diffusion behaviour of polyamide 6
- Coupling of sorption behaviour with water-induced swelling
- Numerical modelling of the thermomechanical behaviour in a non-equilibrium state
- Use of real climate data to calculate moisture distributions

**Dr.-Ing. Anna Katharina Sambale,** Research group leader, Co-authors: Dr.-Ing. Kai Uhlig, Prof. Dr.-Ing. Markus Stommel, all of Leibniz-Institut für Polymerforschung Dresden e. V., Dresden

1	.6:00 🚱 Coffee break with visit to the exhibition & Auto show			
	Mozartsaal (Level 0)	Musensaal (Level 1)	Stamitzsaal (Level 1)	
	Materials 1	Use of Recyclates 1	Sustainability 1	
1	<ul> <li>46:45 Metal replacement – who wins the race? PA 6 or PP? The pedal carrier of the MAN TG3 for model year 2024 <ul> <li>Installation situation</li> <li>Load requirements (emergency braking)</li> <li>Load cycles up to the millions</li> <li>Costs and weight</li> </ul> </li> <li>DiplIng. (FH) Hartmut Häberle, Technical consulting on Plastic applications, Engineering Drivetrain/Cabin &amp; Chassis, Co-author: DiplIng. (FH) Robert Wagner, M. Sc. (TUM), both of MAN Truck &amp; Bus SE, Munich</li> </ul>	<ul> <li>Plastic recyclates and CO<sub>2</sub> balancing: A processor's view</li> <li>Plastics recycling</li> <li>Manufacturing-related challenges</li> <li>Component-related challenges</li> <li>LCA accounting</li> <li>Karolin Kreuels, M. Sc., Development Engineer, Plastics Technology and DrIng. Peter Helmke, Sub-department Head of Testing and Pre-development, Plastics Technology plant Wolfsburg, both of Volkswagen AG, Wolfsburg, Co-author: Prof. DrIng. Reinhard Schiffers, Universität Duisburg-Essen</li> </ul>	<ul> <li>THERMOFIL CIRCLE F*12R series- Recent development in glass fibre reinforced Polypropylene compounds with a reduced carbon footprint for automotive applications</li> <li>Sustainable grade</li> <li>Material specifications</li> <li>Reinforced thermoplastics</li> <li>Low carbon footprint</li> <li>Nicolas Schlutig, M. Eng., Technical support and CAE Manager, Technical Department, Sumika Polymer Compounds Europe, Saint Martin de Crau, France</li> </ul>	
1	<ul> <li><b>5.7:15</b> Shaping the future – BASF plastics innovations in electromobility <ul> <li>Polymers for emobility</li> <li>New class of material Ultramid<sup>®</sup> Expand for use in crash and structurally relevant components, as well as in the battery</li> <li>Polybutylene terephthalate-based plastics solutions without PTFE and antimony trioxide</li> </ul> </li> <li>DrIng. René Holschuh, Segment Manager Transportation and DiplKfm. Simon Weiss, Segment Manager Transportation, both of BASF SE, Ludwigshafen</li> </ul>	<ul> <li>Replacement of body sheet metal parts with plastic recyclates in vehicle series projects using the example of the water box</li> <li>Recycled plastics</li> <li>Structural components made of plastic</li> <li>Sustainability</li> <li>Closed Loop Share</li> <li>DiplIng. (FH) Philipp Malzkorn, Development Engineer, Development of Cultivation systems, Co-authors: DiplIng. Robert Apfelbeck, both of Audi AG, Neckarsulm, Anca Hocke, RSH Polymere GmbH, Hamburg</li> </ul>	<ul> <li>Wood-based bioeconomy and plastics technology – renewable raw materials for technical components</li> <li>Wood-based bioeconomy</li> <li>Thermoplastic composites</li> <li>Cellulose fibers</li> <li>Wood fibers</li> <li>Moterial and process studies</li> <li>Mechanical properties</li> <li>Sebastian Wiedl, MBA, Research Associate, Research and Development Plastics Technology and DrIng. Frederik Obermeier, Research Associate, Research and Development Plastics Technology, Co-authors: Prof. Peter Karlinger, Prof. DrIng. Norbert Müller, all of Technische Hochschule Rosenheim</li> </ul>	



PIAE Networking Party with big public viewing (European Championship match Germany vs. Hungary) in the trade exhibition and the Eva and Sepp Herberger Lounge After an exciting 1st Congress day full of interesting insights and innovations, it is time to round off the evening with a communicative drink and buffet with your colleagues and make new contacts. We cordially invite you to come together and watch the European Championship soccer match between Germany and Hungary (Kick-off: 18:00). Join in the excitement in a convivial atmosphere with a refreshing beer. Look forward to an entertaining evening, full of soccer enthusiasm and interesting conversations! We cordially invite you to join us and look forward to welcoming you there!

# Thursday, June 20, 2024 2nd day of Congress

# Mozartsaal (Level 0)

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# Lightweight Design

# 09:00 TABASKO – Tape based carbon fiber lightweight design

- Local endlessfiber reinforcement of highly stressed part areas of a frunk
- Cold, separate and linear PP-CF-UD-tapes overmolded with PP-GF
   Exterieur by foam injection molding
- Circular economy by fully recyclable material mix and by higher pcr-application quantity
- Improvement of stiffness, impact strength and heat resistance of the part

Dipl.-Ing. Frank Häusler, Development Engineer Plastics Technology, Dr. Ing. h.c. F. Porsche AG, Weissach and Dipl.-Ing. Michael Johann, Specialist Project Manager Body Development, Porsche Engineering Services GmbH, Bietigheim-Bissingen, Co-author: Dr.-Ing, Hubert Stadtfeld, Dr. Ing, h.c. F. Porsche AG, Zuffenhausen

# 09:30 Lightweight construction with thermoplastic sandwich structures, ready for serial production – 3D sandwich components functionalized in the injection molding process

- Thermoplastic honeycomb core sandwich structures
- Thermoforming and functionalization in the injection molding process
- Process and structural design
- Interior. exterior. structural components

Dipl.-Ing. Matthias Biegerl, Development Engineer, ElringKlinger of Fiber Composite Systems, Co-authors: Dr.-Ing. Thomas Gläßer, borh of Fraunhofer IMWS, Halle (Saale), Friedrich Zerling, M. Sc., ThermHex Waben GmbH, Halle (Saale)

# 10:00 Innovative laser ablation process enables new light designs

- Processing of large 3D-molded plastic components with given production fluctuations and current market requirements
- Innovative and flexible process to produce backlit design elements for indoor and outdoor use
- Laser material removal with JENscan<sup>©</sup> Style

Dipl.-Ing. Torsten Reichl, Product Manager Laser Processing, Product Management, JENOPTIK Automatisierungstechnik GmbH, Jena

# Musensaal (Level 1)

Use of Recyclates 2 Moderation: Dipl.-Ing. Fabian Groh, AUDI AG

# Characterization of the Paintability of Plastic Recyclates

- Material Characterization
- Paintability
- Recycling

Volkswagen AG, Wolfsburg, Co-authors: Prof. Dr.-Ing. Christoph Herrmann, Technische Universität Braunschweig, Prof. Dr. Michael Thomas, both of Fraunhofer Institute for Surface Engineering and Thin Films IST, Braunschweig

# Providing solutions to Challenges in Recycled Polymer Processing via Innovative Analytical Techniques

- Analysis of organic and inorganic impurity
- Novel analytical method to determine PE/PP mass fraction in blends
- Solution for low strength of recycled materials
- Problem-solving and root cause analysis

Yoshitomo Furushima, Ph.D., Research Associate, Materials Characterization Laboratories, Toray Research Center, Inc., Otsu, Shiga, Japan AG, Lenningen and Dr.-Ing. Ralf Schlimper, Group Leader Evaluation and Yuki Yoshida, R&D Analysis Manager, Toray Automotive Center Europe, Toray Industries Europe GmbH, Neufahrn bei Freising

# Stamitzsaal (Level 1)

# Manufacturing Processes 2

# Technology Innovation made by KraussMaffei & INEVO -ColorForm

- Innovative finishing technology for plastic components
- · Combination of the technologies Reaction Process Machinery and Injection Molding
- Katharina Tonn, M. Sc., PhD student, Pre-development body system, Innovative tooling technology for processing of Polyurethane and Thermoplastic

Michael Fuchs, B. Eng., Global Business Development RPM, KraussMaffei Technologie GmbH. Parsdorf and Andreas Popp. CEO. INEVO s.r.l., San Polo di Piave, Italy

# Components for battery housings using fiber reinforced polymers: new requirements – new solutions

- High demands on battery housings and their materials
- Innovative use of phenol

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Production process suitable for large-scale production

Dipl.-Ing. (FH) Christian Schludi, Director Business Development, Composite Solutions | Large Scale Solutions and Dr.-Ing. Peter Kuhn, Team Lead Product Design, Composite Solutions | Large Scale Solutions, Co-authors: Dr.-Ing. Christoph Ebel, Dr.-Ing. Maximilian Schäfer, all of SGL Carbon, Meitingen/Innkreis, Austria

# Cost-effective and recyclable: Functionalized aPA6 profiles in injection molding

- Development of robust aPA6 pultrusion process
- Co-molding of the aPA6 profiles as local reinforcement Recyclability of the hybrid structures

Dr.-Ing. Felix Behnisch, Product Manager Structural Lightweight Global, Röchling Automotive SE, Worms and Michael Wilhelm, M. Sc., Group Leader Lightweight Structures, Polymer Engineering, Fraunhofer Institute for Chemical Technology ICT, Pfinztal, Co-author: Dr. Michael Janssen, Röchling Industrial SE & Co. KG, Haren

# DraKo – Wireless contacting of overmolded electronics

- Contacting of printed conductors
- Wireless power and signal transmission
- Processing by film injection molding
- Demonstrator with touch operation
- Possibilities for decoration with functional inks and lacquers
- Versatility of screen printing and process requirements

Dr.-Ing. Angelo Librizzi, Authorized Signatory and Division Manager, Research and Development, KIMW Forschungs-gGmbH, Lüdenscheid and Dr. rer. nat. Dipl.-Chem. Hans-Peter Erfurt, Head of IMD/FIM Technology, Research and Development, Pröll GmbH, Weißenburg i. Bav.

# Thursday, June 20, 2024 | 2nd day of Congress

# Mozartsaal (Level 0)

# 10:30 Virtual Validation and Optimization as Enabler for the 3D Skeleton Winding (3DSW) Technology for Innovative Lightweight Structures

- Digital product development
- Cost-efficient lightweight structures
- Thermoplastic fiber skeleton winding
- Injection overmolding

**Dr.-Ing. Dominik Dörr,** CEO, Co-authors: Stefan Haas, M. Sc., both of Simutence GmbH, Karlsruhe, Jonathan Haas, M. Sc., Dr.-Ing. Björn Beck, both of Fraunhofer ICT, Pfinztal

# Musensaal (Level 1)

- Organo Sheet offcuts Is closed-loop recycling an alternative? "E
- Recycling organic sheet
- Thermoplastic composites
- Material and process studies, Mechanical properties
- Life cycle assessment and economic efficiency

Sabine Hummel, B. Eng., Projekt Associate, Research and Development Plastics Technology and Theresa Pscherer, M. Sc., Research Associate, FG Sustainable Engineering & Management, Co-authors: Prof. Martin Würtele, Prof. Sandra Krommes, all of Technische Hochschule Rosenheim

# Stamitzsaal (Level 1)

# "Battery Box – The Next Generation" – Potential for Plastics

- BEV Given battery compartments are based on metal designs
- Industry value chain is developing thermoplastic concepts to demonstrate feasibility and advantages, focusing on large shot volumes and large tonnage equipment
- Derived cell concepts cover clamp forces up to 11.000 to, enabling large shot volumes as well as composite reinforcements in one single moulding cell
- One tray or lid in one single moulding cycle

**Dr. Clemens Kastner**, Leiter Business Development Automotive, ENGEL Austria GmbH, Schwertberg, Austria





nufacturing Processes 3

# 11:45 Joined with success! Thermomanagement new materials and welding processes in EV thermomanagement

- Different component requirements in thermal management of electric vehicles and vehicles with combustion engines
- New manufacturing technologies and innovative materials due to need for more complex components (direct laser welding process and hybrid plastic-metal welding processes)
- Sustainability aspects of these new manufacturing technologies (energy and material savings)

**Dipl.-Ing. Thilo Stier,** Director Sales & Innovation, AKRO-PLASTIC GmbH, Niederzissen and **Ing. Stephen Thompson,** Director, Manufacturing Engineering, Sogefi Air & C ooling Canada Corp., Montreal, Ouébec, Kanada

# 12:15 New technology for direct processing of chopped fibers in the injection molding process

- Cost-efficient direct processing method
- Chopped glass fiber processing in the injection molding process
- Investigation of fibre length and fibre distribution
- Mechanical properties and applications

**Dipl.-Ing. Stefan Schierl,** Head of Process Engineering & Business Development Technology, KraussMaffei Technologies GmbH, Parsdorf and **Dipl.-Ing. Jan Wiedemann,** Head of Group Innovation and Materials Development, Innovation and Materials Development, Coauthor: Dominik Schmitt, B. Eng., both of Wirthwein SE, Creglingen



Lunch break with visit to the exhibition & Auto show



Odor in Vehicle Interior

Use of recycled materials in car interiors and reduction of the carbon footprint using functional fillers

- Odor reduction in PC recyclates through the use of functional fillers
- Mineral additives to reduce the carbon footprint

Change in mechanical properties when using these fillers
 Dipl.-Ing. Thorsten Hilgers, Project Manager Plastics, Product
 Development, Quarzwerke GmbH, Frechen

Materials 2

Innovative Halogen-Free Flame Retardant Solutions for High-Performance Polymer Applications in E-Mobility: A Focus on Material Sustainability and Technological Advancements

- Flame Retardants: mode of action, fire tests
- Applications in Thermoplastics, e.g. connectors
- Applications in Thermosets, e.g. battery housings
- Trends and outlook

**Dr. Sebastian Hoerold,** Head of Application Development Polymer Solutions, Additives and Adsorbents, Co-author: Dr. Christian Battenberg, both of Clariant Plastics & Coatings (Deutschland) GmbH, Gersthofen

# Management of vehicle indoor air quality with sustainable polymer additive solutions

- Vehicle indoor air quality
- Emission targets
- Increase usage of recycled material
- Odor reducing technologies

**Dr. Antonello Decortes,** Global Product Manager, Marketing and **Dr. Christopher Starkie,** Technology Manager, Research and Development, both of Avient Corporation, Pogliano Milanese, Italy/ Knowsley, United Kingdom

# Upcycling filaments for the functionalization of technical ABS thermoformed components in small series applications

- Additive manufacturing
- Thermoforming
- Upcycling of ABS
- Surface activation

Timo Reindl, M. Sc., Research Associate, Co-author: Prof. Dr.-Ing. Christian Bonten, both of Institut für Kunststofftechnik, Universität Stuttgart

# Thursday, June 20, 2024 | 2nd day of Congress

# Mozartsaal (Level 0)



Sustainability 2 Moderation: Robert Someschan, Ford-Werke GmbH

# 14:00 Sustainable solutions for engineering plastics

- Sourcing as key to virgin like quality for mechanical recyclates
- Ouantity and Ouality deviations
- Recycled solutions for visible parts
- Bio based PA56 as an alternative for conventional PA types

Samuel Moon, B. A., Sales Manager, Technical Sales Team and Dr.-Ing. Julian Heinisch, Application Engineering Plastics/Application Engineering, both of LG Chem Europe GmbH, Frankfurt am Main

# 14:30 Trends and Challenges of Polymer materials in the Automotive sector

- Frugal requirements
- Sustainable, high-quality materials
- Strategic orientation of VW Materials technology
- PIAE 2023 Recap

Timo Achtelik, M. Sc., Sustainability Manager Materials Engineering and Dr. Thomas Taddigs, Sub-department Head of Materials Engineering, both of Volkswagen AG, Wolfsburg

# 15:00 Closing words

# 15:15 End of the congress

### Autoshow

Within the scope of the Autoshow, where current models and concept studies of the car manufacturers are shown, you will have the opportunity to study the plastic components directly on the following vehicles onsite: MAN Sattelzug, Skoda IVET Showcar, BMW i Vision Circular, Audi RS 6 Avant GT, Audi Q6 e-tron Prototyp, Porsche 911 Turbo S, Porsche Macan Turbo Electric, Porsche Taycan Turbo, Ford Explorer, VW Tiguan, VW ID.7 Pro, VW ID.Buzz

The Borealis Sustainability Concept Car is showcasing latest advances in polypropylene (PP) developments: from post-consumer recycled plastics for high-end automotive applications to lightweight flame retardant PP for e-mobility.





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© MAN Truck & Bus SE



© Ford Werke GmbH







© SKODA AUTO a.s.



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# **Exhibition & Sponsoring**

# Marketplace Plastics in Automotive Engineering

The trade show accompanying our PIAE congress has become one of its highlights. More than 80 national and international exhibitors display their innovative plastics solutions. The exhibition is one of the largest in the field of automotive plastics!

# Information

If you would like to exhibit or sponsor at this VDI congress please contact:

# Sandra Schreiner

Project consultant Exhibitions & Sponsoring Phone: +49 211 6214-188 | E-Mail: schreiner@vdi.de

You would like to present your car model or concept study at the Autoshow during the show? Please contact:

# Elena Langenfels

Project consultant Exhibitions & Sponsoring Phone: +49 211 6214-8662 | E-Mail: langenfels@vdi.de



SIRMAX GRAFE



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# Exhibitors PIAE 2024 (as at May 2024)

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# Supporting panel of experts









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Congress languages: German and English (with simultaneous interpreting of the lectures German » English)

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