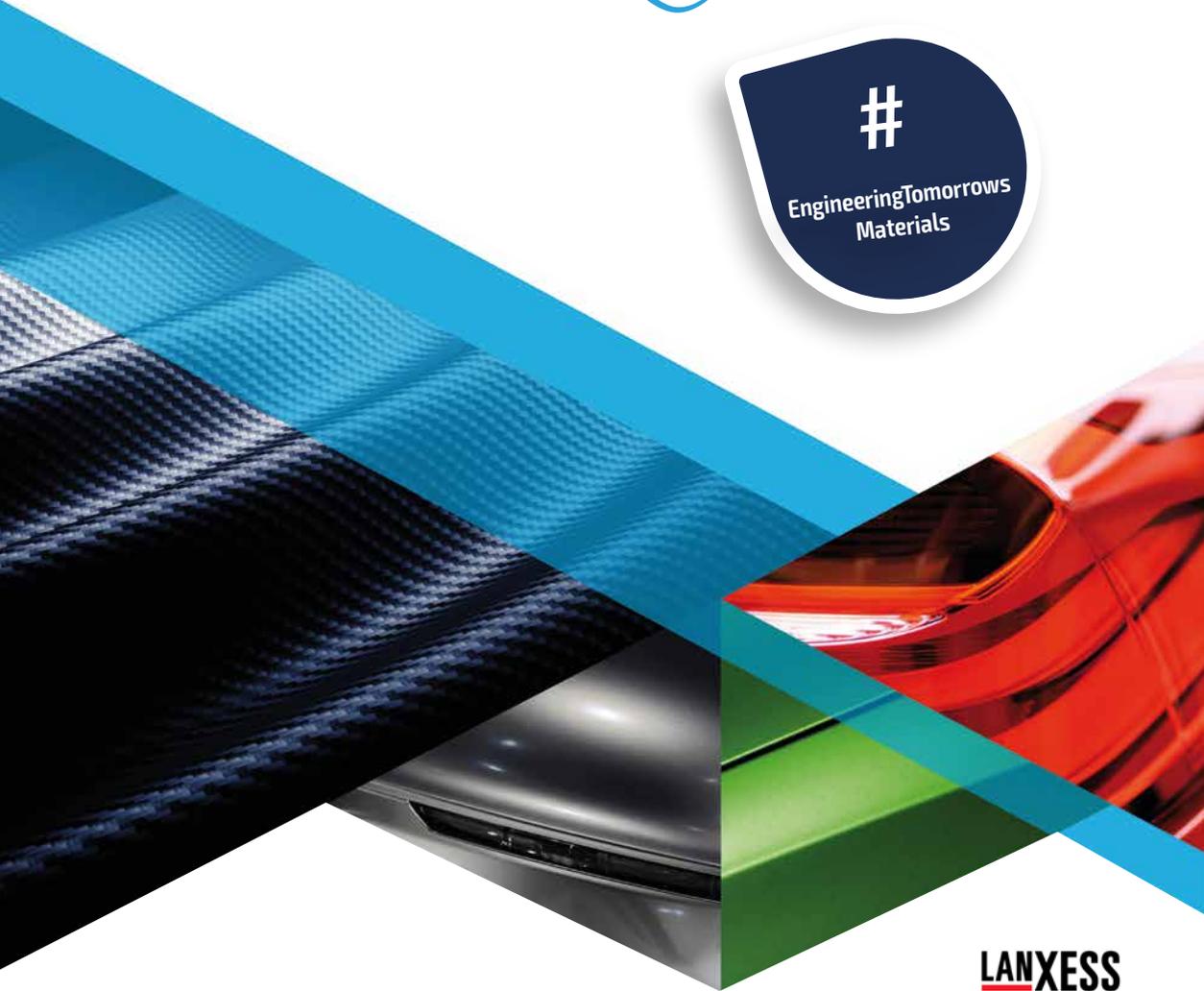
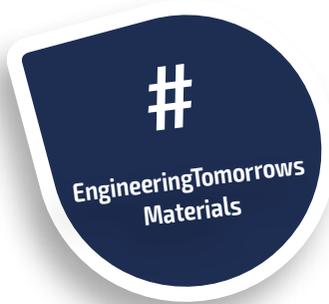




International Congress
September 8 - 9, 2021, Mannheim, Germany

Hybrid concept!
Alternatively, participate
virtually via live stream



Top topics

- Mercedes S-Class: polyamide structural element integrated in the front end
- VW ID3 tailgate: lightweight plastic construction with visible surface
- MAN high roof: FEM calculated and real crash undergone
- Ford front end: architecture optimization through functional integration
- AUDI interior: prediction of surface defects with metallic effect pigments
- Environment: recycling, sorting and processing of plastics

Your benefits

- International industry meeting-point with over 60 exhibitors
- 18 hand-picked keynotes & lectures
- Auto show
- First time with hybrid concept



with friendly support of:



Wednesday, September 8, 2021 – 1st day of Congress

Mozart-Saal (Level 0)

08:50		Plenary session
10:00		Coffee break with visit to the exhibition & Auto show
11:00		Structural components
12:00		Surfaces
13:00		Lunch break with visit to the exhibition & Auto show
14:30		Simulation
16:00		Coffee break with visit to the exhibition & Auto show
17:00		Environment & Recycling
18:00		Beer reception in the exhibition
ab 18:45		Shuttle to the PIAE Afterparty: Wine Village (TURF ² , Horse racing track Mannheim)

Thursday, September 9, 2021 – 2nd day of Congress

Mozart-Saal (Level 0)

09:00		Plastics for the new mobility
10:30		Coffee break with visit to the exhibition & Auto show
11:30		Sustainable use of plastics
13:00		Lunch break with visit to the exhibition & Auto show
14:15		Plenary lecture
14:45		Closing words
15:00		End of the congress



PIAE 2021 AS HYBRID-EVENT

It's your choice: participate on the spot or virtually via live streaming

The online content is **expected** to cover all papers.

The live stream offers you Q&A functions which means you can also address your questions to the speakers from home.

If you want to concentrate fully on networking on the spot and thus do not want to attend every lecture, after booking the online content you will also be able to access the lecture recordings until 31st October 2021.

Detailed information is available on our website:

Service	Presence participation ("Classic")	Presence Participation + Online content	Online content
Admission to the congress in Mannheim - Catering - Visit of the evening reception on 1st congress day ("PIAE Afterparty")	x	x	
Review of the participant list	x	x	
Visit to the exhibition	x	x	
Network opportunity	x	x	
Download VDI Report/Manuscripts & released presentations	x	x	x
Access to all online content*		x	x
Participation fee:	1.420 €	1.570 €	590 €

* Live broadcast of the lectures & subsequent retrieval of the lecture videos until October 31, 2021.



Plenary session | Moderation: Dipl.-Ing. Thomas Drescher

08:50 Welcoming address by the Congress Chairman

Dipl.-Ing. Thomas Drescher, Head of Pre-development and Vehicle assessment, Structure development, Volkswagen AG, Wolfsburg

09:00 Everything starts with a risk – a juggler's perspective

- Curiosity and risk-taking as a constant task
- What's risky today will be the certainty for tomorrow
- How to go for it and how to get motivated
- Thoughts and insights from a professional juggler

Andreas Gebhardt, Juggler and Speaker

09:30 EV exterior and interior design developments for decorative surfacing

- Trends from the Beijing Auto Show 2020 and CES 2021
- Current automotive exterior and interior design trends with the focus on new EV developments
- EV Signature design trends and the role of sensual and decorative surfaces
- Forecast of exterior and interior design developments with a focus on premium upgrade requirements

Dipl.-Ind.-Des. Jörg Friedrich, CEO, Car Men GmbH, Glashütten/Taunus

10:00



Coffee break with visit to the exhibition & Auto show



Structural components

11:00 Development of a crash-relevant polyamide component integrated into the front end of the new Mercedes S-Class

- Implementation as part of a series development through cooperation between Daimler, HBPO and BASF
- Proof of suitability through component tests
- New calculation method for the simulative design of crash-relevant plastic parts

Dipl.-Ing. Andreas Wüst, Team Leader Dynamic Structural Analysis, Performance Materials - Simulation Engineering, BASF SE, Ludwigshafen and **Dipl.-Ing. (FH) Thomas Metzner**, Development Engineer, Process Engineering Materials Engineering Exterior Polymers, Daimler AG, Sindelfingen

11:30 Bolster Active Grille Shutter (BAGS): functional integration and commonization enable X car-line front-end architecture optimization

- More and more demanding requirements for vehicle front end
- CO₂-reduction
- Commonization
- Cooling pack support, grille opening reinforcement, active grille shutter

Dipl.-Ing. (TH) Bert Nießen, Application specialist in front-end integration and **Dipl.-Ing. (TU) Lars Reifenstein**, Manager Body Exterior, both of Body Components Development, Ford Werke GmbH, Cologne



Surfaces

12:00 Lightweight plastic construction with visible surfaces exemplified by the Volkswagen ID3 tailgate

- Lightweight construction
- Visible surface with PP long glass fibers (LFT)
- Interior color
- E-mobility

Dr.-Ing. Peter Helmke, Sub-department head of Research and Advance Development, Volkswagen AG, Wolfsburg and **Dr. Bernhard Pfeiffer**, VW Key Account Manager, Sales/Marketing, Celanese GmbH, Sulzbach, Co-author: Dipl.-Ing. (FH) Andreas Retzlaff, Volkswagen AG, Wolfsburg



Surfaces

12:30 Breakthrough in producing soft interior surfaces by injection molding of TPE

- Super-high-flow TPE for sustainable interior surfaces
- Alternative to PVC slush, reactive PU processes and foils
- Advantages and applications of injection-molded TPE surfaces

Dr.-Ing. Thomas Köppl, Group Product Manager, Product Management, Co-authors: Norbert Grohnmeier, Florian Dresel, all of HEXPOL TPE GmbH, Lichtenfels

13:00 Lunch break with visit to the exhibition & Auto show



Simulation

14:30 The all-new MAN high-roof cab: simulated using FEM and crashed under real conditions

- Description of crash requirements from 2021
- Design/calculation of sandwich structure
- Matching FEM simulation results and the real crash
- Weight-efficiency

Dipl.-Ing. (FH) Andreas Schmitz, Concept Development, Engineering Cab/Chassis Systems, MAN Truck & Bus SE, Munich

15:00 Development and validation of a method to predict optical defects in polymer components with metallic effect pigments

- Metallic effect pigments
- Simulation
- Optical defects

Dr.-Ing. Daniel Kugele, Development Engineer, Supplier, Technology and Construction Feasibility Safeguarding, Audi AG, Ingolstadt and **Dr.-Ing. Sebastian Mönich**, PEG – Plastics Engineering Group GmbH, Darmstadt, Co-author: Cigdem Belgeli, M. Sc., TU Darmstadt

15:30 The history of Integrative Simulation from the Labs to all Designers Desktop

- Simulation-Driven-Design and Lightweight Design
- Balancing Manufacturability and Performance
- Integrative simulation for fiber reinforced thermoplastics
- Multiscale material model based on actual fiber orientation results

Dr.-Ing. Santhanu Jana, Technical Consultant and **Dipl.-Ing. Frank Ehrhart**, Global Technical Specialist, both of Global Technical Team, Altair Engineering GmbH, Böblingen

16:00 Coffee break with visit to the exhibition & Auto show



Environment & Recycling

17:00 Soft touch in climate focus – thermoplastically foamed surfaces for interior parts

- Soft touch in the interior, CO₂-balance, recycling, requirements for automotive parts and materials
- Material development
- Simulation-guided process development
- Properties, potential applications

Dipl.-Ing. Jana Horn, Head of Development, GK Concept GmbH, Dresden and **Manuela Gehringer**, Development, ALLOD Werkstoff GmbH & Co. KG, Burgbernheim



Environment & Recycling

17:30 Sorting technologies: the key for high-quality products in a circular economy

- Plastics recycling
- Sorting and treatment
- Quality
- Advanced recycling technology

Dr.-Ing. Harald Lehmann, Vice President Plastic Materials & Processing, Circular Economy, TOMRA Sorting GmbH, Mülheim-Kärlich

18:00 Beer reception in the exhibition*

from 18:45  **Shuttle to the PIAE Afterparty: Wine Village** (TURF², Horse racing track Mannheim)

All participants are cordially invited to a communicative drink with buffet. Discuss the results of the first day of the event with your professional colleagues and make new contacts. We cordially invite you to join us and look forward to welcoming you there!

**insofar as permissible in accordance with the specifications in force at the time of the event.*

PIAE Afterparty: Wine Village

Our PIAE Afterparty pursues the idea of bringing together all congress participants in a special atmosphere for networking. With a yearly changing slogan we plan to surprise you every year. Our evening event will be supported by OEMs who will definitely keep us company on the spot.

Connecting entertainment and business

In 2021 our PIAE Afterparty will take you into the culinary world of wine, and in keeping with the sobriquet 'Wine Village'. Visit our included evening event on the first day of the congress and have relaxed discussions with customers, partners and acquaintances. We want to ensure our PIAE Afterparty optimally combines entertainment and business. This is why we will be providing suitable entertainment as well as quiet lounge areas.

Take advantage of this great opportunity and find the perfect spot for yourself and your conversation partners!

Beer before wine and you'll be fine!

In 2021 our evening event will kick off with a round of beer in the exhibition. After the congress, take advantage of the opportunity to hold interesting discussions with the exhibitors over a beer or two. Following this, our 'PIAE Afterparty: Wine Village' starts at the horse racing track Mannheim. The beautiful location is only 10 minutes away from the congress center.

» Registration required – secure your place!

Register now and benefit from a free shuttle trip to the horse racing track. Please note that the evening reception is expected to be limited to **600 participants**.





Plastics for the new mobility

09:00 Shaping the future of e-mobility with holistic plastic solutions

- Polymers within the electric powertrain
- Requirements for polymers and materials
- EMI shielding solutions for plastics
- Flame retardancy

Dr.-Ing. René Holschuh, Application Development Transportation and **Dr.-Ing. Thomas Bayerl**, E/E & E-mobility Segment Marketing Manager; both of BASF SE, Ludwigshafen

09:30 Curing in seconds – structural adhesive for e-mobility

- Challenges of bonding in e-mobility
- Fast-curing adhesives based on polyurea
- Added value in applications such as battery cell fixation, cooling elements, battery housings
- Exploring similar fields of application

Dipl. Techniker HF Philipp Hug, Business Development Manager Automotive, nolax AG, Sempach Station, Switzerland

10:00 Polypropylene films and injection molding resins for In-Mold Structural Electronics

- Suitability of polypropylene for IMSE™ technology in automotive segment
- Requirements for PP film and PP injection molding resin
- Experiences from IMSE™ polypropylene stack verification project
- Application areas for polypropylene stack

Dipl.-Ing. (DH) Andreas Benndorf, Customer Senior Engineer, Advanced Solutions for Automotive, Repsol Chemie Deutschland GmbH, Frankfurt am Main, Germany and **Dr. Antti Keränen**, CTO & Co-Founder, Co-author: Dr. Janne Asikkala, both of TactoTek Group, Oulu, Finland

10:30 Coffee break with visit to the exhibition & Auto show



Sustainable use of plastics

11:30 Replacement of chrome(VI)-coating processes in decorative applications – plating on plastics

- Substitution of Cr(VI) Cr(VI)-free pretreatment for plastic components and Cr(III) coatings
- Color- and corrosion-resistance
- Decorative coating of plastic components (plating on plastics) in electroplating job-shops
- Interior and exterior bright and satin coatings

Peter Böttcher, Project Manager Decorative Galvanotechnology, SurTec Deutschland GmbH, Zwingenberg

12:00 Lightweight TPE for weight-reduced automotive applications

- Density comparison of soft plastics and elastomers
- Production and processing of lightweight TPE
- Material properties of lightweight TPE compared to current materials
- Automotive applications with TPE and possible weight reduction

Dipl.-Ing. (FH) Martina Hetterich, Project Manager Advanced Development and **Matthias Michl**, Head of Team Automotive Application Development, both of KRAIBURG TPE GmbH & Co. KG, Waldkraiburg

12:30 R-Cycle – digital product passport for a sustainable circular economy

- R-Cycle: a cross-company project
- Developing global standards for a sustainable circular economy
- Seamless documentation of product properties relevant to recycling
- A digital twin for products

Dr.-Ing. Thomas Walther, Head of Application Technology, ARBURG GmbH + Co. KG, Loßburg, Co-author: Dr. Benedikt Brenken, Reifenhäuser GmbH & Co. KG Maschinenfabrik, Troisdorf

13:00



Lunch break with visit to the exhibition & Auto show



Plenary lecture | Moderation: Dipl.-Ing. Thomas Drescher

14:15 ReOil – OMV's Pace to Circular Economy

- Sustainable economy
- Plastic to Oil
- Chemical Recycling
- Post Consumer Plastic (PCP)

Dr. Stefan Pirker, Head of Technology and Innovation Management Plastic to Oil, OMV Refining & Marketing GmbH, Schwechat, Austria

14:45 Closing words

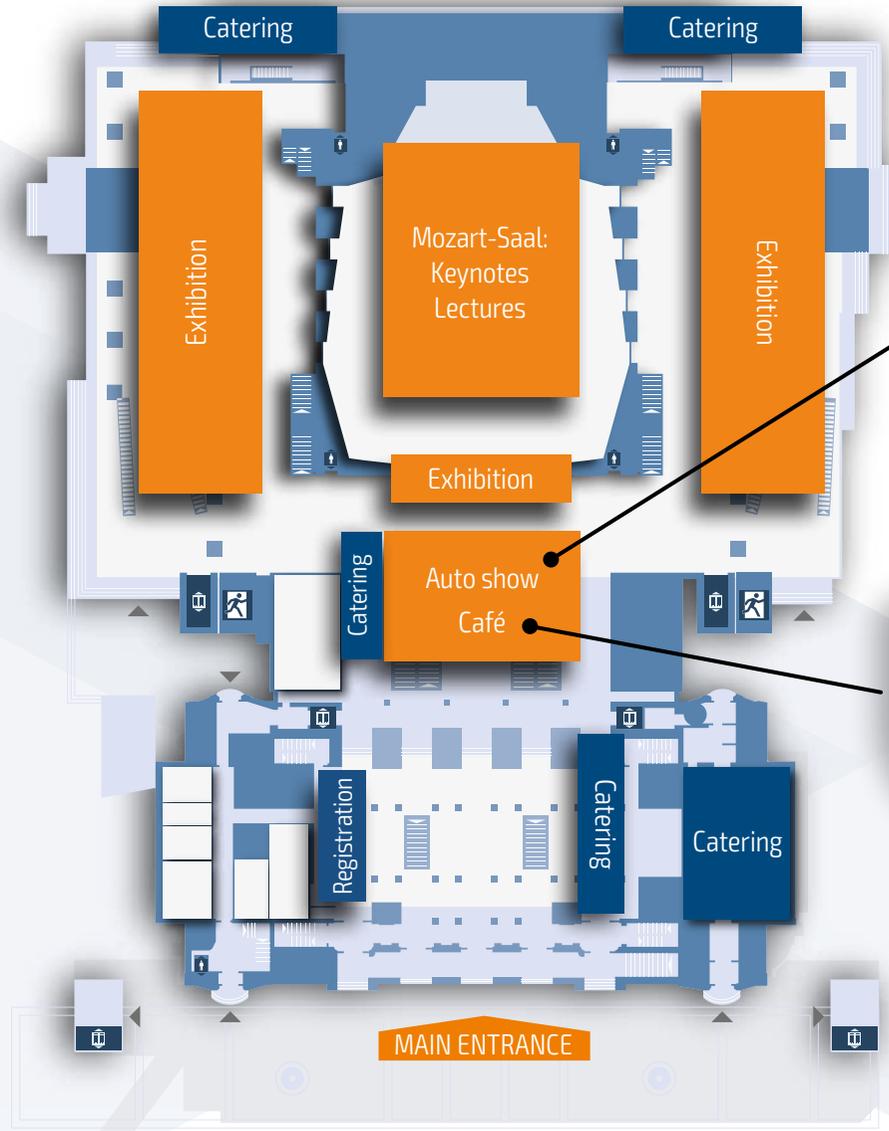
15:00 End of the congress

Hall plan Rosengarten

Level 0

Foyer
Exhibition
Auto show
Catering
Café

Mozart-Saal
Keynotes & lectures



Current models and concept studies: study plastic components directly on the vehicle

Make new contacts while enjoying some interesting coffee specialties!

Exhibition & Sponsoring

Marketplace Plastics in Automotive Engineering

The trade show accompanying our PIAE congress has become one of its highlights. More than 60 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:

Martina Slominski

Team Leader Exhibition & Sponsorship

Phone: +49 (0) 211 6214-385

Email: slominski@vdi.de

Gold sponsors

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Trinseo is a global materials solutions provider and manufacturer of plastics, latex binders, and synthetic rubber with a focus on delivering innovative, sustainable, and value-creating products that are intrinsic to our daily lives. Trinseo is dedicated to making a positive impact on society by partnering with like-minded stakeholders, and supporting the sustainability goals of our customers in a wide range of end-markets including automotive, consumer electronics, appliances, medical devices, packaging, footwear, carpet, paper and board, building and construction, and tires. Trinseo had approximately \$3.8 billion in net sales with 2,700 employees globally in 2019. For more information, please visit:

www.trinseo.com.

Exhibitors PIAE 2021 (as at April 2021)

3A Composites Airex AG

almaak international GmbH

ARBURG GmbH + Co. KG

BASF Polyurethanes GmbH

BASF SE

Covestro Deutschland AG

DOMO Engineering Plastics Italy SpA

Elix Polymers S. L.

EMS-CHEMIE (Deutschland) Vertriebs GmbH

ENGEL Austria GmbH

Ensinger GmbH

Eval Europe

Evonik Industries AG

Foboha (Germany) GmbH

Gaugler & Lutz GmbH & Co. KG

GKG Goldmann Kunststoffe GmbH & Co. KG

Grafe Advanced Polymers GmbH

INEOS Styrolution Europe GmbH

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Lyondell Bassell

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Marubeni Europe Plc

Mitsui Prime Advanced Composites Europe B. V.

Momentive Performance Materials GmbH

PCW GmbH

PolyIC GmbH & Co. KG

Polyram plastic industries LTD

Pöppelmann Kunststoff-Technik GmbH & Co. KG

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RIA Polymers GmbH

Röhm GmbH

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Summerer Technologies GmbH & Co. KG

Synventive Molding Solutions GmbH

TechnoCompound GmbH

TELSONIC AG

Trinseo Deutschland

Auto show

Within the scope of the Auto show, where current models and concept studies of the car manufacturers are shown, the participants will have the opportunity to study plastic components directly on the vehicle.



General information

Congress Chairman



Dipl.-Ing. Thomas Drescher, Head of Pre-development and Vehicle assessment, Structure development, Volkswagen AG, Wolfsburg

Supporting panel of experts



1. L to R

Dr. Dipl.-Phys. Eberhard Duffner, ARBURG GmbH + Co. KG, Loßburg

Jochen Hardt, Covestro Deutschland AG, Leverkusen

Roger Kaufmann, GK Concept GmbH, Dresden

2. L to R

Klaus Münker, Magna Exteriors GmbH, Altbach

Dipl.-Ing. Karl-Heinz Stelzl, Ingenieurbüro Stelzl, Strasskirchen

Dipl.-Ing. Martin Würtele, KraussMaffei Technologies GmbH, Munich

Program committee



1. L to R

Pascal Bertens, DAF Trucks N.V., Eindhoven, The Netherlands

Dr. Christian Bornhorst, Volkswagen AG, Wolfsburg

Dipl.-Ing. (FH) Volker Freitag, Dr. Ing. h.c.F. Porsche AG, Weissach

Jürgen Gugg, BMW AG, Munich

Emre Kuzucu, Mercedes-Benz Türk A.S., Istanbul, Turkey

2. L to R

Dr. Gérard Liraut, Renault s.a.s., Guyancourt Cedex, France

Dipl.-Ing. Wolfgang Möller, Volkswagen Osnabrück GmbH

Stefan Röhl, MAN Truck & Bus AG, Munich

Robert Someschan, Ford-Werke GmbH, Cologne

Technical Sponsor

VDI Society for Materials Engineering

The VDI Society for Materials Engineering makes a point of networking experts both from business and from scientific fields close to actual applications in order to allow discussion of current questions about components and products from the point of view of materials and the corresponding technologies and also to enable engineers in this field to access via the network the approaches to solutions which have been worked out.

www.vdi.de/gme

Media Partners



International Congress

PIAE 2021

September 8-9, 2021, Mannheim, Germany

Participation fee

Your participation is secured by our hygiene concept!



Price per person plus VAT

Service	Presence participation ("Classic")	Presence participation + Online content	Online content
Admission to the congress in Mannheim - Catering - Visit of the evening reception on 1st congress day ("PIAE Afterparty")	X	X	
Review of the participant list	X	X	
Visit to the exhibition	X	X	
Network opportunity	X	X	
Download VDI Report/Manuscripts & released presentations	X	X	X
Access to all online content		X	X
Participation fee:	1.420 €	1.570 €	590 €

Participant safety: Measures that are necessary at the time of the event will be taken and the visitors will be informed about this in detail. All regulations of the German Government concerning Covid-19 will be complied.

Congress Venue: Congress Center Rosengarten, Rosengartenplatz 2, 68161 Mannheim, Phone +49 (0) 621 41 06-0, www.mcon-mannheim.de/en
Accommodation: A limited number of rooms are available in the Dorint Kongresshotel in Mannheim (Phone +49 (0) 621 1251-0, Email: info.mannheim@dorint.com) at a special rate with mention of the keyword "VDI 2021". Please book your accommodation early. Other hotel bookings can be made through our free booking service www.vdi-wissensforum.de/hrs.
Venue of the 'PIAE Afterparty: Wine Village': TURF*, Pferderennbahn Mannheim, Turfweg, 68239 Mannheim

Services: The scope of services includes the digital event documentation, beverages during breaks, lunch and the evening reception. The event documentation are available online. Access data will be sent electronically to the participants prior to the event. For more information, see our terms and conditions.

Payment method: Participants with an invoice address outside of Austria, Germany and Switzerland are kindly requested to pay by credit card. Please don't send your credit card details via email, fax or post. Please book your ticket at www.piae-europe.com. Transferring your credit card details via our website ensures your details are encrypted and security of your data is guaranteed.

Congress office: Congress Center Rosengarten, Foyer

Opening hours PIAE: Wednesday, September 8, 2021: 8:00 am to 6:45 pm | Thursday, September 9, 2021: 8:00 am to 3:00 pm

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

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