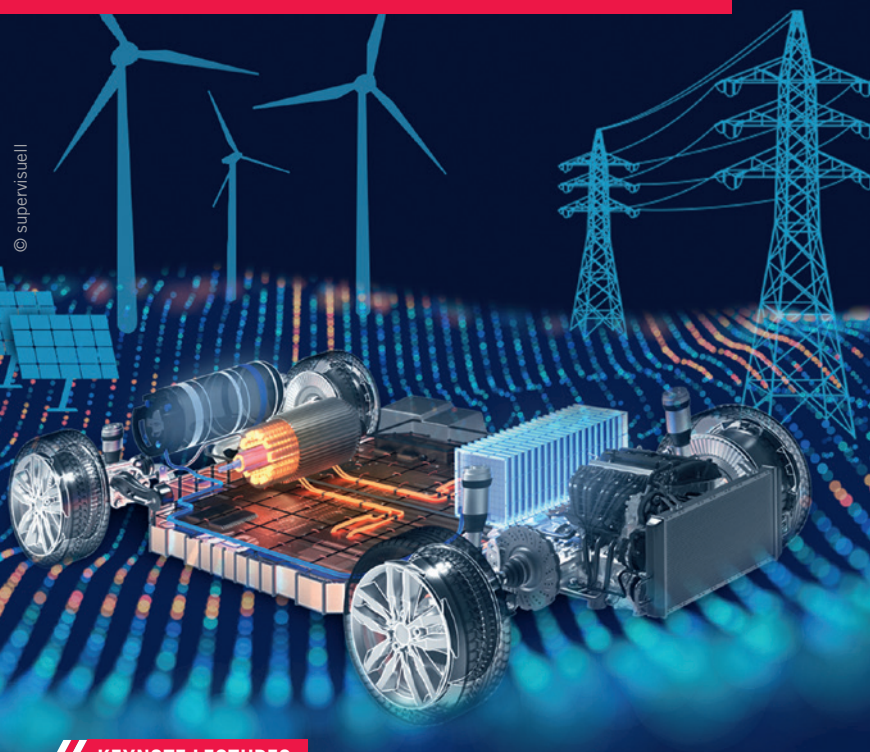


Powertrains and Energy Systems of Tomorrow 2023

Shaping the future open to all technologies

28 – 29 March 2023
Berlin, Germany



KEYNOTE LECTURES

EWE AG // Netze BW GmbH // NOW GmbH
Volkswagen AG // ZF Friedrichshafen AG



Shaping the future open to all technologies

- / ELECTRIC POWERTRAIN VARIANTS
- / BATTERY DEVELOPMENT
- / BIDIRECTIONAL CHARGING, CHARGING INFRASTRUCTURE, AND STORAGE TECHNOLOGY
- / HYDROGEN FUEL CELL AND INFRASTRUCTURE
- / DECENTRALIZED ENERGY SUPPLY AND DATA MANAGEMENT

HIGHLIGHT

Ceremony of the Sustainability Award in Automotive



SUSTAINABILITY AWARD
IN AUTOMOTIVE
ATZ MTZ ARTHUR&LITTLE



Prof. Dr. Peter Gutzmer
Editor-in-Charge ATZ | MTZ Group,
Springer Nature

Welcome

The shift in energy and mobility systems towards solutions based on renewable electricity requires a reorganization of global raw material and value chains. In this process, not only must the CO₂ footprint be comprehensively evaluated, but also the economic consequences and social aspects in a global context must be taken into consideration.

How is the expansion of renewables-based power generation and grid infrastructure, including storage technologies, developing? Are electric vehicles gaining market volume quickly enough? What are the main technologies emerging in the field of powertrain systems? How do infrastructure expansion and volume growth affect the CO₂ balance? What roles will hydrogen and electricity play in passenger cars and commercial vehicles? What influence does the end customer exert on the desired transformations? How can the political objectives be secured?

At the 17th International MTZ Congress on “Powertrains and Energy Systems of Tomorrow”, leading representatives of the automotive industry, energy producers and grid operators as well as from politics and science will exchange views on these issues.

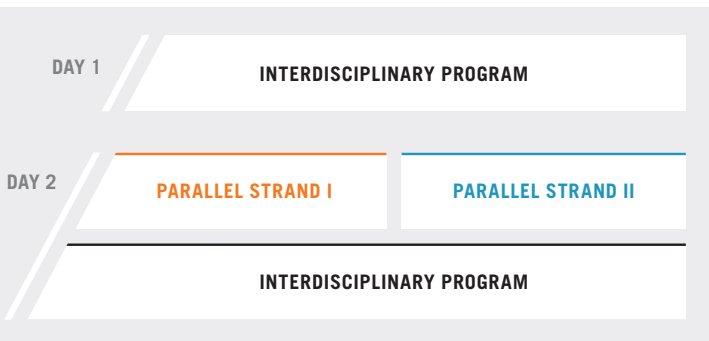
On behalf of the Scientific Advisory Board

Stay at the cutting edge!

- ✓ Highly relevant technical papers presented by renowned speakers
- ✓ Networking in the international expert community
- ✓ Innovative products and services

Powertrains and Energy Systems of Tomorrow

The technological transformation in individual mobility on the basis of regenerative primary energy requires an intensified technical exchange of ideas between leading representatives of the automotive and energy industries on the one hand and science and politics on the other. For that reason, this congress will focus on topics that not only describe the change in vehicle powertrains, but also present technological solutions in the associated infrastructure, including the provision of primary energy. Discussions will concentrate on political framework conditions as well as on systemic innovations for the future and digital solutions.



Accompanying exhibition on both days



Scientific Advisory Board

Our Scientific Advisory Board, which is made up of prominent experts in their respective fields, provides support during the planning phase of the congress and helps to identify suitable topics.

With its expertise the board has made a valuable contribution to the choice of themes for the lecture program.



Prof. Dr. Peter Gutzmer
Editor-in-Charge ATZ | MTZ Group,
Springer Nature

Scientific Director of the Congress

Dr. Norbert Alt
FEV Group GmbH

Klaus Baumgärtner
BridgingIT GmbH

Prof. Dr. Bernhard Geringer
TU Vienna

Katja Gicklhorn
e-mobil BW GmbH

Dr. Kathrin Goldammer
Reiner Lemoine Institut gGmbH

Prof. Dr. Uwe Dieter Grebe
AVL List GmbH

Axel Hausen
Netze BW GmbH

Lars Hentschel
Volkswagen AG

Dr. Urban Keussen
EWE AG

Matthias Kratzsch
IAV GmbH

Christian Lensch-Franzen
APL Automobil-Prüftechnik Landau GmbH

Stephan Rebhan
Vitesco Technologies Germany GmbH

Prof. Dr. Hans-Christian Reuss
University of Stuttgart

Dr. Peter Saueremann
BP Europa SE

Dr. Otmar Scharrer
ZF Group

Dr. Michael Schlegel
BMW Group

Dr. Wolfgang Warnecke
Shell Deutschland GmbH

Dr. Marco Warth
MAHLE GmbH

Ursel Willrett
IAV GmbH

08:45 Welcome and opening of the congress

Prof. Dr. Peter Gutzmer, Editor-in-Charge ATZ | MTZ Group;
 Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group;
 Matthias Kratzsch, CEO, IAV GmbH

09:00 – 10:30, Plenum – Room 1

KEYNOTE LECTURES I

Moderation: Prof. Dr. Peter Gutzmer, Editor-in-Charge ATZ | MTZ Group;
 Matthias Kratzsch, IAV GmbH

KEYNOTE**09:00 Expansion of hydrogen infrastructure –
bottle neck or enabler?**

Dr. Urban Keussen, Chief Technical Officer, EWE AG, Germany

KEYNOTE**09:30 E-drive requirements for today and tomorrow –
customer centric approach defining the technical concept**

Lars Hentschel, Head of EAE, E-drive Systems & Components,
 Volkswagen AG, Germany

KEYNOTE**10:00 EVmore – ultimate efficiency driveline concept**

Dr. Stephan Demmerer, Senior Manager Advanced Development
 E-Drives, ZF Friedrichshafen AG, Germany

10:30 Refreshment break with coffee and tea in the exhibition area

11:00 Ceremony of the Sustainability Award in Automotive

A joint initiative of ATZ, MTZ
 and Arthur D. Little GmbH

 **SUSTAINABILITY AWARD
IN AUTOMOTIVE**

**CEREMONY OF THE
SUSTAINABILITY AWARD IN AUTOMOTIVE**

The categories:

- Mobility Concepts
- Technology
- Start-up

The Organizers:

ATZ MTZ ARTHUR D. LITTLE

11:45 – 12:30, Plenum – Room 1

**JOINT DISCUSSION
WITH A FISHBOWL CHARACTER
WITH THE KEYNOTE SPEAKERS AND THE AUDITORIUM**

Moderation: Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group;
 Ivo Banek, External Communication, IAV GmbH

Participants:

Dr. Urban Keussen, Chief Technical Officer, EWE AG, Germany

Lars Hentschel, Head of EAE, E-drive Systems & Components,
 Volkswagen AG, Germany

Dr. Stephan Demmerer, Senior Manager Advanced
 Development E-Drives, ZF Friedrichshafen AG, Germany

Prof. Dr. Jan Wörner, President, acatech –
 National Academy of Science and Engineering, Germany

12:30 Lunch in the exhibition area

14:00 – 15:30, Plenum – Room 1

HYDROGEN FUEL CELL

Moderation: Stephan Rebhan, Vitesco Technologies Germany GmbH

- 14:00 From electrolyzer to fuel cell: sustainable mobility along the hydrogen chain**
Prof. Dr. Tim Hosenfeldt, Senior Vice President, Central Technology, Schaeffler AG, Germany
- 14:30 High power density fuel cell systems for commercial vehicles**
Dr. Alexander Schenk, Lead Engineer PEM Fuel Cell System Architecture, AVL List GmbH, Austria
- 15:00 BiFoilStack – novel heavy-duty cell and stack design with compound-foil-based bipolar plates**
Dr. Marius Zubel, Team Leader Fuel Cell Simulation, FEV Europe GmbH, Germany [in cooperation with Dätwyler Schweiz AG, Switzerland; Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT, Germany]

15:30 Refreshment break with coffee and tea in the exhibition area

The current congress program and further information can be found online:

www.atzlive.com/powertrain



16:00 – 18:00, Plenum – Room 1

ELECTRIC POWERTRAIN VARIANTS

Moderation: Dr. Norbert Alt, FEV Group GmbH

- 16:00 Torque density on a new level – results of a holistic e-drive system optimization**
Dr. Viktor Warth, Head of Advanced Development System, ZF Friedrichshafen AG, Germany
- 16:30 Early evaluation of battery-electric powertrain architectures with a focus on axial flux machines**
Felix Wipfler, PhD Student Traction Systems, Vitesco Technologies Group AG [in cooperation with Universität der Bundeswehr München], Germany
- 17:00 Innovative PMASynRel rotor shape for traction electrical machines in a recycling-oriented value chain**
Misa Milosavljevic, Innovation Project Leader, IFP Énergies Nouvelles [in cooperation with CEA-Liten], France
- 17:30 System optimization of SiC inverters regarding efficiency, cost, and reliability**
Dr. Thomas Orlik, Senior Technical Consultant, IAV GmbH, Germany

approx.

18:00 End of the 1st day of the congress

19:30 Networking dinner at the restaurant Zollpackhof



Enjoy a pleasant evening and interesting conversations over dinner with colleagues and speakers.



© Zollpackhof

08:30 – 10:00, Parallel strand I – Room 1

BATTERY DEVELOPMENT

Moderation: Dr. Marco Warth, MAHLE GmbH

- 08:30 Between thermal limits and battery degradation – cell-specific optimization of a fast charging strategy**
Mareike Schmalz, Team Manager Battery Advanced Development, APL Automobil-Prüftechnik Landau GmbH, Germany
- 09:00 Solid-state battery pack design – revolution or evolution?**
Dr. Moritz Teuber, Technical Expert / Team Lead, Electric Powertrain, FEV Europe GmbH [in cooperation with RWTH Aachen University], Germany
- 09:30 Fast charging for trucks and cars – status, challenges, solutions for the widespread use of BEVs**
Benjamin Langer, Head of Product Line E-Drive, AVL Software and Functions GmbH, Germany

10:00 Refreshment break with coffee and tea in the exhibition area

10:30 – 12:00, Parallel strand I – Room 1

BIDIRECTIONAL CHARGING

Moderation: Christian Lensch-Franzen, APL Automobil-Prüftechnik Landau GmbH

- 10:30 Results from the research project “Bidirectional Charging Management”**
Mark Pilkington, System Architect Bidirectional Charging, BMW Group [in cooperation with KOSTAL Industrie Elektrik GmbH; Bayernwerk Netz GmbH], Germany
- 11:00 Project Bidirectional Charging Management – results and findings from the BDL field trial**
Adrian Ostermann, Research Associate, Forschungsstelle für Energiewirtschaft e. V. (fFE Munich), Germany
- 11:30 User perspectives on bidirectional charging – insights from the field trial of a research project**
Sebastian Hirsch, Research Associate, Franziska Kellerer, Research Associate, Institute CENTOURIS, University of Passau [in cooperation with Chair of Marketing and Innovation, University of Passau], Germany

12:00 Lunch in the exhibition area

08:30 – 10:00, Parallel strand II – Room 2

DATA ACQUISITION AND MANAGEMENT

Moderation: Klaus Baumgärtner, BridgingIT GmbH

- 08:30 E-Charging: success factors for data and service management**
Philipp Merlitz, Solution Expert Connected Mobility, T-Systems International GmbH, Germany
- 09:00 Data acquisition and management in connected energy systems – lessons learned from the research project “Bidirectional Charging Management”**
Xaver Pfab, Former Project Manager BDL Project, Germany
- 09:30 Eight recommendations for a sustainable mobility data architecture – insights from the strategic dialogue for the automotive sector in Baden-Württemberg**
Dr. Christian Förster, Deputy Head of Unit 53: Mobility Data, Mobility Services, Traffic Models, Ministry of Transport Baden-Württemberg, Germany

10:30 – 11:30, Parallel strand II – Room 2

DECENTRALIZED ENERGY SUPPLY

Moderation: Katja Gicklhorn, e-mobil BW GmbH

- 10:30 Home refueling for FCEV**
Linda Schorer, Research Assistant, Research Cluster Electrochemistry, DHBW Mannheim [in cooperation with TU Chemnitz], Germany
- 11:00 Hydrogen production by electrolysis in the light of a decentralized supply**
Dr. Andreas Lenk, Team Lead Special Processes, Vitesco Technologies Germany GmbH, Germany

13:00 – 13:30, Plenum – Room 1

SCIENCE SLAM: POWERTRAIN CONCEPTS OF THE FUTURE

Moderation: Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group

Participants:

Lars Knaup, Research Assistant, Institute for Internal Combustion Engines and Powertrain Systems (VKM), TU Darmstadt, Germany

Tobias Stoll, Research Assistant, Research Institute for Automotive Engineering and Powertrain Systems Stuttgart (FKFS), Germany

Michael Conin, Research Assistant, Institute for Internal Combustion Engines and Powertrain Systems (VKM), TU Darmstadt, Germany

Swantje Konradt, Research Assistant, Institute of Mobile Systems (IMS), Otto-von-Guericke-University Magdeburg, Germany

Jonathan Ziegler, PhD Student, Institute for Piston Machines (IFKM), Karlsruhe Institute of Technology (KIT), Germany

13:30 – 15:00, Plenum – Room 1

CHARGING INFRASTRUCTURE

Moderation: Prof. Dr. André Kulzer, Institute for Automotive Engineering (IFS), University of Stuttgart

13:30 Grid and system integration of electric vehicles – a look at international requirements

Elisabeth Springmann, Research Associate, Forschungsstelle für Energiewirtschaft e. V. (FFE Munich), Germany

14:00 Simulation of e-bus operation and automated planning of charging and tank infrastructure

Julian Brendel, Research Associate, Project Leader Buffered-HLL, Reiner Lemoine Institut gGmbH, Germany

14:30 Innovative functions using the new standard ISO 15118-20

Ursel Willrett, Senior Technical Consultant Infrastructure Systems E-Mobility, IAV GmbH, Germany

15:00 Refreshment break with coffee and tea in the exhibition area

15:30 – 16:30, Plenum – Room 1

KEYNOTE LECTURES II

Moderation: Dr. Kathrin Goldammer, Reiner Lemoine Institut gGmbH

KEYNOTE**15:30 At the intersection of mobility and energy: insights from the work of Germany's National Centre for Charging Infrastructure**

Dagmar Fehler, Head of the National Centre for Charging Infrastructure, NOW GmbH – National Organisation Hydrogen and Fuel Cell Technology, Germany

KEYNOTE**16:00 Run-up of electromobility – stress test for power grid operators?**

Eric Ahlers, Head of Strategy and Committees, Netze BW GmbH, Germany

16:30 Closing remarks

Prof. Dr. Peter Gutzmer, Editor-in-Charge ATZ | MTZ Group;
Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group



IAV

With more than 8,000 employees, IAV is one of the world's leading engineering partners for the automotive industry. The company has been developing innovative concepts and technologies for future vehicles for more than 35 years, and in 2021 it generated sales of around 863 million euros.

Customers worldwide include all well-known automobile manufacturers and suppliers. In addition to vehicle and drive system development, IAV already entered the field of electric mobility and autonomous driving at an early stage and is now one of the leading development service providers in these areas. In addition to its development centers in Berlin, Gifhorn, and Chemnitz/Stollberg, IAV has other locations in Munich, Sindelfingen, and Ingolstadt, as well as in Europe, Asia, and North and South America.

Cooperation partner



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Mr. Alex Woidich
Phone +49 611 7878-206
alex.woidich@springernature.com

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Due to their importance for the economy and society, the automotive industry and mobility providers bear special responsibility for achieving climate protection and general sustainability goals.

The Sustainability Award in Automotive, which is jointly organized by the ATZ/MTZ Group and sustainability and industry experts from the consultancy Arthur D. Little, honours outstanding examples of sustainable contributions to mobility.

The categories:

- Mobility Concepts
- Technology
- Start-up

Award Partner

Arthur D. Little GmbH

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We believe in an open world and create connected communities and ecosystems through our open consultancy approach.

ARTHUR D. LITTLE

www.adlittle.com

Registration fee

€ 1,495.– plus VAT

This includes the conference documentation, the catering during breaks and the evening event on 28-03-2023.

Date

28 – 29 March 2023

Venue

Pullman Berlin Schweizerhof
Budapester Straße 25
10787 Berlin, Germany

Languages used in the presentations

German and English with simultaneous interpreting
(German – English / English – German)

Hotels

Some hotels have room blocks at reduced prices for the participants. You can find more information on the events page of our website.

Further Information and Online Registration:

www.atzlive.com/powertrain



Participants

This ATZlive congress is aimed at executives and engineers as well as experts in industry, authorities, NGOs, and scientific institutes who are involved in powertrain development, the generation and distribution of hydrogen and electricity, the expansion and integration of the power grid, international markets, production networks, and supply chains.

Further Information and Online Registration:



www.atzlive.com/powertrain

Powertrains and Energy Systems of Tomorrow 2023
28 – 29 March 2023, Berlin, Germany

Your contact partner

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ATZlive@springernature.com

Organizer

ATZlive // Spotlight on Powertrain and Vehicle Engineering

Our events are a regular fixture in the calendar for vehicle and engine developers. Here you can expect innovative specialist conferences on up-to-date subjects concerning vehicle and powertrain technology – from the viewpoints of research, development and use.

Our close collaboration with the editorial teams of our specialist magazines ATZ and MTZ keeps us fully up-to-date on the latest topics and trends on the market.

Springer, with its automotive technology brands in the ATZ and MTZ Group, is part of Springer Nature, one of the world's leading publishing groups for scientific, educational and specialist literature.