

Powertrains and Energy Systems of Tomorrow 2024

The need for accelerated market-driven implementation

14 – 15 May 2024
Chemnitz, Germany

HIGHLIGHT

Visit to
IAV GmbH
Stollberg
Development Center

KEYNOTE LECTURES

Saxon State Ministry of Economic Affairs, Labor and Transport
TU Chemnitz / EWE AG / Volkswagen AG
IAV GmbH / Arthur D. Little GmbH



The need for accelerated market-driven implementation

- / ELECTRIC POWERTRAIN VARIANTS
- / SUSTAINABILITY AND THE RAW MATERIAL SUPPLY CHAIN
- / CHARGING AND GRID INTEGRATION
- / HYDROGEN FUEL CELLS AND INFRASTRUCTURE
- / 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 transition of energy and mobility systems to solutions based on regenerative electricity requires a systemic approach if we are to avoid reaching a dead end. In this process, we must not only comprehensively evaluate the carbon footprint, but also consider the economic consequences and social aspects in a global context.

The focus is on the necessary and consistent adaptation to the market requirements in Europe. How is vehicle technology changing with regard to costs, driving range, and charging time? What are the main priorities concerning the expansion of charging networks? Are power generation and storage systems and the power grid infrastructure being developed quickly enough? How can the political objectives be achieved? What are the developments in the use of hydrogen and its infrastructure?

At the 18th International MTZ Congress on “Powertrains and Energy Systems of Tomorrow”, leading representatives from the automotive industry, energy producers, and grid operators as well as from politics and science will exchange views on these issues.

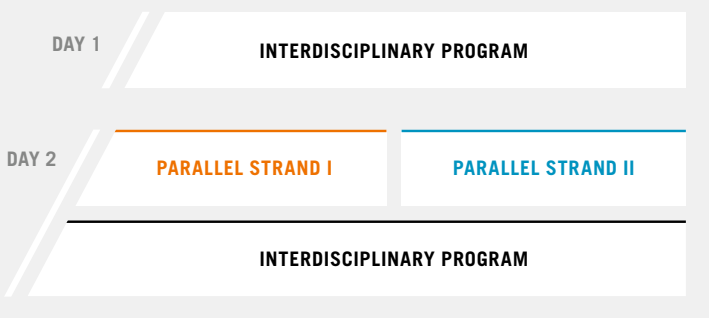
On behalf of the Scientific Advisory Board

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

Prof. Dr. Uwe Dieter Grebe
AVL List GmbH

Axel Hausen
Netze BW GmbH

Lars Hentschel
Volkswagen AG

Walter Holderried
e-mobil BW GmbH

Dr. Urban Keussen
EWE AG

Christian Lensch-Franzen
APL Automobil-Prüftechnik Landau GmbH

Thomas Müller
IAV 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 Friedrichshafen AG

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

09:00 – 10:00, Plenum – Carlowitz-Saal

KEYNOTE LECTURES I

Moderation: Prof. Dr. Peter Gutzmer, Editor-in-Charge ATZ | MTZ Group

KEYNOTE**09:00 Mobility transition in 2024 –****how the challenges are constantly changing**

Ines Fröhlich, State Secretary, Saxon State Ministry of
Economic Affairs, Labor and Transport, Germany

KEYNOTE**09:30 Hydrogen as a sustainable energy carrier –
potentials for the energy and mobility transition**

Prof. Dr. Thomas von Unwerth, Chair of Advanced Powertrains,
Faculty of Mechanical Engineering, Chemnitz University of
Technology, Germany

10:00 – 10:45, Plenum – Carlowitz-Saal

**Joint discussion with a fishbowl character
with the keynote speakers and the auditorium**

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

FUTURE DRIVE SYSTEMS – QUO VADIS?

Participants:

Ines Fröhlich, State Secretary, Saxon State Ministry of
Economic Affairs, Labor and Transport, Germany

Lars Hentschel, Head of EAE, Volkswagen AG, Germany

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

Marc Sens, Senior Vice President Advanced Development, IAV
GmbH, Germany

Prof. Dr. Thomas von Unwerth, Chair of Advanced Powertrains,
Faculty of Mechanical Engineering, Chemnitz University of
Technology, Germany

10:45 Refreshment break with coffee and tea in the exhibition area

11:15 – 12:15, Plenum – Carlowitz-Saal

KEYNOTE LECTURES II

Moderation: Prof. Dr. Peter Gutzmer, Editor-in-Charge ATZ | MTZ Group

KEYNOTE**11:15 Electric cars as a storage device for the energy system –
a game changer or no change at all?**

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

KEYNOTE**11:45 Impact of the energy infrastructure and mobility ecosystems
on future high-voltage architectures**

Lars Hentschel, Head of EAE, Volkswagen AG, Germany

12:15 Lunch in the exhibition area

13:15 – 14:15, Plenum – Carlowitz-Saal

**RENEWABLE ENERGY SOURCES AND
CHARGING TECHNOLOGY**

Moderation: Dr. Norbert Alt, FEV Group GmbH

**13:15 The problem of the volatile energy supply from renewable
energy sources and their use for electrified mobility:
challenges, case studies and solutions**

Martin Rothbart, Senior Product Manager Energy & Sustainability,
AVL List GmbH, Austria

13:45 ChargeForward: BMW's Smart Charging Program in the USA

Dr. Niels Bohn, Head of E-Mobility and Powertrain Field Analysis,
BMW of North America, LLC

14:15 Refreshment break with coffee and tea in the exhibition area

14:45 – 16:15, Plenum – Carlowitz-Saal

FUTURE POWERTRAINS

Moderation: Dr. Marco Warth, MAHLE GmbH

- 14:45 Emerging trends and opportunities in power electronics for battery-electric vehicles**
Dr. Ayman Ayad, Expert Power Electronics & Sr. System Engineer, Vitesco Technologies GmbH, Germany
- 15:15 Electric drive of the future: trade-off between efficiency and weight of an innovative electric powertrain – influenced by the energy costs worldwide**
Dr. Christoph Sasse, Head of Advanced Development Electric Drive, ZF Friedrichshafen AG, Germany
- 15:45 Life cycle-based propulsion concept development in a post-fossil energy age**
Jannik Kexel, Research Associate, Chair of Thermodynamics of Mobile Energy Conversion Systems (TME), RWTH Aachen University [in cooperation with FEV Europe GmbH], Germany
- 16:15** End of the lectures

HIGHLIGHT

- 16:30 Bus transfer and visit to IAV GmbH, Stollberg Development Center**

Transformation at IAV

As part of the tour, you will see how IAV is implementing the transformation in the hybrid testing facility in Stollberg and which test benches we use for testing electric components from the battery cell to the complete vehicle system.



- approx.
19:00 End of the first day of the congress

- 19:30 Networking dinner at the Turm-Brauhaus Chemnitz**
Enjoy a pleasant evening and interesting conversations over dinner with colleagues and speakers.



SUSTAINABILITY AWARD
IN AUTOMOTIVE

ATZ MTZ ARTHUR D. LITTLE

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

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

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08:30 – 10:00, Parallel strand I – Carlowitz-Saal

CHARGING

Moderation: Ursel Willrett, IAV GmbH

08:30 Lessons learned from the Home Energy Management System's (HEMS) benchmark with a focus on PV-optimized charging

Lukas Schriewer, Principal Charging & Energy, Team Lead Technology & Operations, P3 automotive GmbH, Germany

09:00 Standardized inductive charging to integrate autonomous driving fleets into the energy infrastructure

Dr. Philip Grabherr, Head of Predevelopment Electronics and Mechatronics, MAHLE New Mobility Solutions GmbH; Thomas Würz, Head of Wireless Power Transfer, Siemens AG [in cooperation with MAHLE International GmbH], Germany

09:30 Optimal design of local energy systems under the boundary condition of grid-supporting V2G functions

Dr. Alexander Koch, Project Engineer, E-Mobility Systems, FEV Europe GmbH, Germany

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

10:30 – 11:30, Parallel strand I – Carlowitz-Saal

GRID INTEGRATION

Moderation: Stephan Rebhan, Vitesco Technologies Germany GmbH

10:30 Harmonic measurements of electric vehicles on a large existing employee parking lot

Julia Gartner, Electrical Engineering Planner, Volkswagen AG [in cooperation with Technical University of Braunschweig], Germany

11:00 Investigation of control methods for electric vehicle charging to reduce voltage unbalance

Gian-Luca Di Modica, Research Associate, elenia Institute for High Voltage Technology and Power Systems, Technical University of Braunschweig, Germany

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

BATTERY-ELECTRIC DRIVE SYSTEMS

Moderation: Prof. Dr. Hans-Christian Reuss, Institute of Automotive Engineering (IFS), University of Stuttgart

08:30 Efficient, lightweight, cost-effective: an innovative electric drive unit with a dual rotor electric machine

Dr. Gereon Hellenbroich, Department Manager Design & CAE Electric Powertrain, FEV Europe GmbH; Dr. Alexander Rosen, Co-Founder, Systems Engineer, DeepDrive GmbH, Germany

09:00 Phase change cooling – future potentials of electric drives under new cooling conditions

Dr. Chritoph Danzer, Head of Department E-Axle Concepts and Design, IAV GmbH, Germany

09:30 Prospects for next-generation battery technologies in the German passenger vehicle market

Samuel Hasselwander, Scientific Assistant, Institute of Vehicle Concepts, German Aerospace Center (DLR), Germany

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

SUSTAINABILITY AND THE RAW MATERIAL SUPPLY CHAIN

Moderation: Dr. Peter Sauermann, BP Europa SE

10:30 Catena-X's contribution to sustainability in the supply chain

Dr. Jürgen Padberg, Managing Partner, Global Head of Automotive & Manufacturing Industries, Detecon International GmbH, Germany

11:00 Mobility transition as a political vision: Have consumers been left behind?

Bernhard Wiesinger, Head of Consumer Protection & Member Interests, Österreichischer Automobil-, Motorrad- und Touringclub (ÖAMTC), Austria

11:35 Plenum – Carlowitz-Saal

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



12:15 Lunch in the exhibition area

13:15 – 14:45, Plenum – Carlowitz-Saal

FUEL CELL

Moderation: Prof. Dr. Bernhard Geringer, TU Vienna

13:15 **Heavy-duty fuel cell trucks – from an idea to a business model**

Patrick Huber, Chairman, H2 Energy Holding AG, Switzerland

13:45 **One-stop solution for fuel cell and energy storage integration in the battery package space**

Dr. Andreas Viehmann, Head of Innovation Area Drive and Storage Technologies, EDAG Engineering GmbH, Germany
[in cooperation with BRAMBLE Energy, United Kingdom]

14:15 **Predictive energy management for fuel cell electric vehicles**

Dr. Severin Hänggi, Technical Project Lead – Energy Management, Embotech AG, Switzerland

14:45 Refreshment break with coffee and tea in the exhibition area

15:15 – 16:15, Plenum – Carlowitz-Saal

KEYNOTE LECTURES III

Moderation: Prof. Dr. Peter Gutzmer, Editor-in-Charge ATZ | MTZ Group

- KEYNOTE**
- 15:15 **The strategic importance of a diversified powertrain mix for meeting global mobility requirements**
Marc Sens, Senior Vice President Advanced Development, IAV GmbH, Germany
- KEYNOTE**
- 15:45 **From hype to reality: hydrogen as a key to unlocking sustainable energy and powertrain systems?**
Dr. Klaus Schmitz, Partner, Arthur D. Little GmbH, Germany
- 16:15 **Closing remarks**
Prof. Dr. Peter Gutzmer, Editor-in-Charge ATZ | MTZ Group;
Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group

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

www.atzlive.com/powertrain





IAV

As one of the automotive industry's leading global engineering and technology partners, IAV develops the digital mobility of the future. The company has been developing innovative concepts, methods, and solutions for 40 years and generated sales of 837 million euros in 2022.

With 7,600 employees, IAV brings together the best from a wide variety of worlds: the automotive and IT world, the hardware and software world, and the product and service world. In addition to vehicle and powertrain development, the company focused on topics such as e-mobility and autonomous driving at an early stage and is now one of the leading technology providers in these fields.

Alongside its development centers in Berlin, Gifhorn, and Chemnitz/Stollberg, IAV has further locations in Germany, including Munich, Sindelfingen, and Ingolstadt, as well as in Europe and Asia and in North and South America.

Cooperation partner



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For information on the various presentation options, please contact:

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

Media partners



Registration fee

€ 1,495.– plus VAT

This includes the conference documentation, the use of the digital event platform as well as the catering during breaks and the evening event on 14-05-2024.

Date

14 – 15 May 2024

Venue

Carlowitz Congresscenter Chemnitz
Theaterstraße 3
09111 Chemnitz, 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

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14 – 15 May 2024, Chemnitz, Germany

Your contact partner

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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.