

Powertrains and Energy Systems of Tomorrow 2022

Shaping the future open to all technologies

10 – 11 May 2022
Berlin, Germany or
virtually via live stream

Hybrid event

Your choice:

Participate on site
or virtually via
live stream

KEYNOTE LECTURES

Arthur D. Little GmbH // Dr. Ing. h.c. F. Porsche AG //
EWE AG // Hitachi, Ltd // Nel Hydrogen



Shaping the future open to all technologies

- / POWERTRAIN SOLUTIONS FOR HEV, PHEV, BEV, AND FCEV**
Technology, systems, sustainability, and economy
- / INFRASTRUCTURE AND ENERGY CHAINS**
Regenerative electricity, storage systems, hydrogen, global systems
- / GRID INTEGRATION**
Energy and data management, sector coupling
- / INTERNATIONAL APPROACHES**
Production, distribution, distribution chains, costs

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 defossilization of energy systems and transport toward renewable electricity-based solutions is the core challenge in climate protection. Fully electric and electrified drives are at the heart of future mobility. This can only be successfully implemented in close cooperation between the automotive and energy industries and policymakers.

A future global powertrain mix must systemically address the challenge of a sustainable and secure supply and distribution of energy. What is needed is an approach that is open to all technologies and considers energy resources and converters throughout the entire process. Only by shaping the technology discussion as a “not only, but also” approach towards next-generation engines in a sustainable energy system will it be possible to leverage the potentials for a targeted reduction in global CO₂. The perfect interaction between traffic concepts, vehicles with sustainable powertrains, and infrastructure is the prerequisite for market success.

We look forward to your participation in the hybrid event 16th International MTZ Congress on Future Powertrains.

On behalf of the Scientific Advisory Board

Your Corona protection concept

- ✓ Comprehensive hygiene protection concept on site
- ✓ Participation option in parallel also via live stream with Q&A function, 1:1 video chat with participants and other useful functions

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 industry 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.

DAY 1 & DAY 2

INTERDISCIPLINARY PROGRAM

PARALLEL STRAND I

PARALLEL STRAND II

INTERDISCIPLINARY PROGRAM

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

Prof. Dr. Michael Bargende
University of Stuttgart

Klaus Baumgärtner
BridgingIT GmbH

Prof. Dr. Bernhard Geringer
TU Vienna

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

Isabell Knüttgen
e-mobil BW GmbH – State Agency for
New Mobility Solutions and Automotive
Baden-Württemberg

Christian Lensch-Franzen
APL Automobil-Prüftechnik Landau GmbH

Xaver Pfab
BMW Group

Stephan Rebhan
Vitesco Technologies AG

Prof. Dr. Hans-Christian Reuss
University of Stuttgart

Dr. Peter Sauermann
BP Europa SE

Dr. Otmar Scharrer
ZF Group

Dr. Gunnar Steg
Volkswagen Group Charging GmbH

Dr. Wolfgang Warnecke
Shell Global Solutions (Deutschland) GmbH

Dr. Marco Warth
MAHLE GmbH

Ursel Willrett
IAV GmbH

08:30 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 – 10:30, Plenum – Saphir

KEYNOTE LECTURES

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

09:00 **Direct drive system to make in-wheel electric vehicles closer to a production reality**
Dr. Akeshi Takahashi, Manager Research and Development Group, Hitachi, Ltd, Japan

09:30 **How to solve the trade-off between vehicle dynamics, traveling time, and CO₂ emissions**
Otmар Bitsche, Director E-Mobility, Dr. Ing. h.c. F. Porsche AG, Germany

10:00 **Building the European high-power charging network of the future – Challenges and impact for infrastructure and energy systems**
Alexander Krug, Partner, Arthur D. Little GmbH, Germany

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

11:00 – 12:30, Parallel Strand I – Saphir

SYSTEM ARCHITECTURE

Moderation: Dr. Marco Warth, MAHLE GmbH

11:00 The emotional BEV between the conflicting objectives of efficiency and performance
Gerald Teuschl, Senior Product Manager Electrification, AVL List GmbH, Austria [in cooperation with AVL Software and Functions GmbH, Germany]

11:30 eConnect: efficient solutions for AWD BE
Alessio Paone, Manager Electrified Powertrain Technology – Mechanics, ZF Friedrichshafen AG, Germany

12:00 Balancing of efficiency, costs, and CO₂ footprint for future mobility
Dr. Christoph Danzer, Team Manager Powertrain Synthesis, IAV GmbH, Germany

12:30 Lunch in the exhibition area

11:00 – 12:30, Parallel Strand II – Rubin

GRID INFRASTRUCTURE

Moderation: Xaver Pfab, BMW Group

11:00 Automated grid compatibility tests and status/perspective for future grid stability
Reinhard Nenning, Head of Grid Planning and Power Quality, Vorarlberger Energienetze GmbH, Austria

11:30 Community based e-charging infrastructure – a solution for rural areas?
Prof. Dr. Jessica Rövekamp, Degree program in Energy Economics and Technologies, Hochschule Albstadt-Sigmaringen, Germany

12:00 Challenges in grid integration of electric vehicles in urban and rural areas
Jakob Gemassmer, Research Associate, Unit Mobility with Renewable Energy, Reiner Lemoine Institut gGmbH, Germany

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

www.atzlive.com/powertrain



13:45 – 15:15, Parallel Strand I – Saphir

OVERALL SYSTEM

Moderation: Prof. Dr. Uwe Dieter Grebe, AVL List GmbH

- 13:45 **Hybrid BEV for future LCV applications**
Dr. Tolga Uhlmann, Vice President Motor & Hybrid Powertrains, FEV Europe GmbH [in cooperation with FEV Vehicle GmbH], Germany
- 14:15 **Potential analysis of load profile predictions using the example of a predictive hybrid strategy**
Lukas Schäfers, Research Associate, RWTH Aachen University [in cooperation with FEV Europe GmbH], Germany
- 14:45 **Depending on lithium and cobalt – the impact of current battery technology and future alternatives**
Mareike Schmalz, Team Manager Battery Pre-Development, APL Automobil-Prüftechnik Landau GmbH, Germany

13:45 – 15:15, Parallel Strand II – Rubin


GRID STABILIZATION SMART GRID

Moderation: Dr. Kathrin Goldammer, Reiner Lemoine Institut gGmbH

- 13:45 **Smart Grid Integration – an IT-based approach to incentivize and coordinate private charging**
Michael Lehmann, Head of Process and IT Meter2Cash, Mitteldeutsche Netzgesellschaft STROM mbH, Germany
- 14:15 **Harmonics in industrial grids as a result of charging infrastructure in employee parking lots**
Julia Gartner, Electrical Engineering Planner, Volkswagen AG [in cooperation with TU Braunschweig], Germany
- 14:45 **Efficient charging of electric vehicles by intelligent load management**
Ursel Willrett, Senior Technical Consultant Infrastructure Systems E-Mobility, IAV GmbH, Germany

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

15:45 **Ceremony of the Sustainability Award in Automotive**

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

 presented by IAV


16:45 – 18:15, Plenum – Saphir

PANEL DISCUSSION WITH INTRODUCTORY PRESENTATION

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

-  INTRODUCTORY PRESENTATION
16:45 **Introductory presentation**
-  PANEL DISCUSSION
17:15 **Will the penny drop – smart energy policy or dead end?**

approx. 18:15 End of the 1st day of the congress

- 19:30 **Networking Dinner at the restaurant Umspannwerk Ost**
 Enjoy a pleasant evening and interesting conversations over dinner with colleagues and speakers.

 SUSTAINABILITY AWARD IN AUTOMOTIVE

CEREMONY OF THE SUSTAINABILITY AWARD IN AUTOMOTIVE

The categories:

- Mobility Concepts
- Technology
- Start-up
- Overall Concepts and Systems

The Organizers:

08:00 – 09:00, Plenum – Saphir

KEYNOTE LECTURES

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

- KEYNOTE

08:00

Renewable hydrogen production via electrolysis: Current status and opportunities
Dr. Katherine Ayers, Vice President of Research and Development, Nel Hydrogen, USA
- KEYNOTE

08:30

How do we get green electrons and green molecules into our vehicles in the future?
Dr. Urban Keussen, Chief Technical Officer, EWE AG, Germany

9:00 **LCA**
Plenum – Saphir

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

10:30 – 12:00, Parallel Strand I – Saphir

SYSTEM OPTIMIZATION

Moderation: Prof. Dr. Michael Bargende, University of Stuttgart

- 10:30

System optimization for 800V e-drive systems in automotive applications
Dr. Viktor Warth, Senior Manager Electrified Powertrain Technology System (EDPS), ZF Friedrichshafen AG, Germany
- 11:00

High voltage architectures for 800V vehicles
Stefan Schmalzl, System Engineer, Vitesco Technologies GmbH, Germany
- 11:30

High voltage up to 1000V: enabler for efficient EV powertrains
Mathias Deiml, Head of E-Drive Innovation Center, AVL Software and Functions GmbH, Germany [in cooperation with AVL List GmbH, Austria]

12:00 Lunch in the exhibition area

09:00 – 10:00, Plenum – Saphir

LCA

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

- 09:00

Resilient supply chains and robust strategies for the transformation of the automotive industry
Sylvia Stieler, Project Staff Member Automotive, IMU Institut GmbH [in cooperation with DLR e. V.], Germany
- 09:30

CO₂-optimized design for a sustainable product life cycle
Martin Rothbart, Senior Product Manager Energy & Sustainability, AVL List GmbH, Austria

10:30 – 12:00, Parallel Strand II – Rubin

CHARGING INFRASTRUCTURE

Moderation: Prof. Dr. Hans-Christian Reuss, University of Stuttgart

- 10:30

Technological solution for the control of energy flows
Dr. Axel Schild, Senior Technical Consultant, IAV GmbH, Germany
- 11:00

Future electric filling station – 20x 750kW power with intelligent load and tariff management
Sebastian Ewert, Founder & Head of chargeBIG, MAHLE GmbH, Germany
- 11:30

Intelligent charging load management in combination with local energy systems for residential, commercial, and industrial applications
Dr. Dirk Pietruschka, Managing Partner, enisyst GmbH, Germany

13:00 – 15:00, Parallel Strand I – Saphir

FCEV AND H₂ TECHNOLOGY

Moderation: Dr. Benedikt Schauder, ZF Friedrichshafen AG

- 13:00 **FCTRAC and BioH₂Modul – a way to zero emission mobility in agriculture**
Veronica Gubin, Project Assistant, ICEBE; Christian Varlese, Project Assistant, IFA, TU Vienna, Austria
- 13:30 **Systems engineering for fuel cell vehicles: from simulation to prototype**
Dr. Daniel Ritzberger, Development Engineer
PEM Fuel Cell Systems, AVL List GmbH, Austria
- 14:00 **Hydrogen is electric, too – Status quo and future perspectives for transport applications**
Dr. Andreas Janssen, Hydrogen Commercial Head Europe, Shell Deutschland GmbH, Germany
- 14:30 **Sustainability assessment of an integrated value chain for the production of e-fuels**
Jana Späthe, Research Associate, Institute for Technology Assessment and Systems Analysis (ITAS), Karlsruhe Institute of Technology (KIT), Germany

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

15:30 – 17:00, Plenum – Saphir

MARKETS & CUSTOMERS

Moderation: Dr. Norbert Alt, FEV Group GmbH

- 15:30 **Creating and sustaining user engagement in bidirectional charging**
Franziska Kellerer, Project Leader, CENTOURIS Institute; Johanna Zimmermann, Research Associate, Chair of Marketing and Innovation, University of Passau, Germany
- 16:00 **The energy transition in Germany: CO₂ neutrality balancing energy demand and energy supply**
Matthias Böger, Engine Analysis Engineer, Porsche Engineering Services GmbH, Germany
- 16:30 **Still in the black with green mobility?**
Pascal Mast, Director New Technologies and Sustainability, TÜV SÜD Auto Service GmbH, Germany

17:00 Closing remarks

13:00 – 15:00, Parallel Strand II – Rubin

BIDIRECTIONAL CHARGING

Moderation: Ursel Willrett, IAV GmbH

- 13:00 **Grid integration of a vehicle fleet using V2G technologies**
Lucas Mödder, Resarch Associate, Teaching and Research Area Mechatronics in Mobile Propulsion (MMP), RWTH Aachen University [in cooperation with FEV Europe GmbH], Germany
- 13:30 **Bidirectional charging management – a highly integrated system**
Xaver Pfab, Project Manager E-Mobility Grid Integration, BMW Group [in cooperation with Kostal Industrie-Elektrik GmbH and Bayernwerk Netz GmbH], Germany
- 14:00 **Regulatory challenges for the provision of ancillary services from electric vehicles**
Erdem Uzun, Project Manager, TenneT TSO GmbH [in cooperation with e3 consult GmbH and Bayernwerk Netz GmbH], Germany
- 14:30 **Project “bidirectional charging management” – insights and evaluation of the field trial**
Adrian Ostermann, Research Associate, FfE München, Germany



IAV

With more than 8,000 employees, the tech solution provider 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 2020 it sold around 896 million euros. Customers worldwide include all well-known automobile manufacturers and supplier. In addition to vehicle and drive development, IAV has already entered the e-mobility and autonomous driving at an early stage and is today one of the leading development service provider in these areas. In addition to the development centers in Berlin, Gifhorn and Chemnitz/Stollberg, IAV has other locations in Munich, Sindelfingen and Ingolstadt, as well as in Europe, Asia, North and South America.

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For information on the various presentation options, please contact:

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**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 Awards in Automotive, which are jointly organised by the ATZ/MTZ Group and sustainability and industry experts from the consultancy Arthur D. Little, recognise outstanding examples of sustainable contributions to mobility.

The categories:

- Mobility Concepts
- Technology
- Start-up
- Overall Concepts and Systems

Award Partner

Arthur D. Little GmbH

Arthur D. Little helps you meet today's most pressing challenges and seize tomorrow's most promising opportunities.

We expand your capabilities by working side by side with you, drawing on our network of innovators, entrepreneurs, technologists and academics.

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

Participation on site: € 1,395.– plus VAT

Participation via live stream: € 995.– plus VAT

This includes the conference documentation, the catering during breaks and the evening event on 10-05-2022. Virtual participation does not include the catering during breaks and the evening event.

Date

10 – 11 May 2022

Venue

Radisson Collection Hotel Berlin or virtually via live stream
Karl-Liebknecht-Straße 3
10178 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:



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Your contact partner

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Organizer

ATZlive // Spotlight on Powertrain and Vehicle Engineering

Our events are firm fixtures in the diaries of automotive engineers and engine specialists. We offer a range of innovative conferences on the latest topics in the world of automotive engineering and engine technology, from the perspective of research, development and applications.

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.