The Powertrain of Tomorrow 2021

Thinking in systems

27 – 28 January 2021
Hanau near Frankfurt am Main, Germany
or virtually via live stream

in conjuction with

Grid Integration + Electrified Mobility

KEYNOTE LECTURES

Beijing Electric Vehicle Co. Ltd., China
BridgingIT GmbH / FEV Europe GmbH
Schaeffler Automotive Buehl GmbH & Co. KG
Are sector coupling and competition between technologies the keys to success?

**Welcome**

Drive systems consisting of internal combustion engines, electrification, and CO₂-neutral fuels are effective means of enabling us to continue to meet our transport and mobility requirements without restrictions in the future. The precondition for this is renewable electric energy. This energy can be used either directly in electric drive systems or indirectly through synthetic fuels. If international markets are to be successfully supplied with sustainable products, a discussion that is open to all technologies and goes beyond familiar technical borders will become increasingly important. For that reason, ATZlive is combining this powertrain congress with the ATZ Congress “Grid Integration + Electrified Mobility” in order to promote interaction between representatives from the automotive industry, energy providers, and power grid operators.

Together with our partner Schaeffler, we would like to invite you to take part in our joint congress in Hanau, either in person or via our live stream, to gain the very latest information on powertrain developments.

We look forward to your participation.

On behalf of the Scientific Advisory Board

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**Stay at the cutting edge!**

- High relevant technical papers presented by renowned speakers
- Networking in the international expert community
- Innovative products and services
The Powertrain of Tomorrow

Increasingly stringent international legislation on CO₂ emissions is causing a paradigm shift in the powertrain. Electrification is advancing, and powertrains need to be considered more strongly as part of an integrated network of internal combustion engines, transmissions, and electrification. The focus of this international conference is on powertrain synthesis, with components and vehicle integration forming the basis. System thinking, intelligent management, and new development methods play decisive roles in the race for the drive system of the future.

Participants will be able to switch between the congresses “The Powertrain of Tomorrow” and “Grid Integration + Electrified Mobility”.

Scientific Advisory Board

Our Scientific Advisory Board, which is made up of prominent figures from the relevant field, provides support during the planning phase of the conference 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.
09:15 **Welcome and opening of the conference**
Dr. Johannes Liebl, Editor-in-Charge ATZ | MTZ | ATZelektronik, Springer Nature, Germany

09:30 – 11:00 **KEYNOTES**

**Moderation:** Dr. Johannes Liebl, Editor-in-Charge ATZ | MTZ | ATZelektronik

- **09:30 Dynamic hybrid powertrain with high efficiency and reduced complexity**
  Manfred Homm, Senior Vice President R&D Powertrain & E-Mobility, Schaeffler Automotive Buehl GmbH & Co. KG, Germany

- **09:30 How much engine power do we need in the future?**
  Franco Bellillo, Deputy General Manager, Vice President Purchasing, Beijing Electric Vehicle Co. Ltd., China

10:00 **Charging infrastructure 2.0 – analysis of existing car-to-infrastructure in Europe and urgent recommendations for more customer acceptance**
Dirk Braun, Senior Consultant Innovation, BridgingIT GmbH, Germany

10:30 **How much engine power do we need in the future?**
Franco Bellillo, Deputy General Manager, Vice President Purchasing, Beijing Electric Vehicle Co. Ltd., China

11:00 Refreshment break with coffee and tea in the exhibition area

11:30 – 13:00 **LIFE CYCLE ASSESSMENT**

**Moderation:** Prof. Dr. Hans-Christian Reuss, Head of the Chair of Motor Vehicle Mechatronics, IFS, University of Stuttgart, Germany

- **11:30 Life cycle characteristics \( \text{CO}_2 \) of different propulsion concepts**
  Khosrau Heidary, Head of Life Cycle Engineering, Vitesco Technologies, Germany

- **12:00 LCA of a battery electric vehicle using renewable electricity in the entire supply chain**
  Dr. André Sternberg, Scientist, Fraunhofer Institute for Solar Energy Systems (ISE), Germany

- **12:30 LCA of the battery compared to the fuel cell in the electric vehicle**
  Dr. Jürgen Kölich, Marketing Manager, EVA Fahrzeugtechnik GmbH, Germany

13:00 Lunch in the exhibition area

14:30 – 16:00 **EMISSIONS AND DEVELOPMENT PROCESSES**

**Moderation:** Prof. Dr. Michael Bargende, Head of the Chair of Automotive Powertrains, IFS, University of Stuttgart, Germany

- **14:30 Both effective and efficient: variable valvetrain systems for CVs to meet low \( \text{NO}_x \) emission targets**
  Dr. Michael Elicker, Manager System Development Heavy Duty, Schaeffler Technologies AG & Co. KG, Germany [in cooperation with IAV GmbH, Germany]

- **15:00 Holistic engine and EAT emission concept development for a future ultra-low emissions HD diesel engine**
  Dr. Reza Rezaei, Manager, IAV GmbH, Germany

- **15:30 Holistic approach for development towards a \( \text{CO}_2 \)-neutral powertrain for HD applications**
  Dr. Martin Müther, Vice President, FEV Europe GmbH, Germany [in cooperation with FEV Group GmbH, Germany]

16:00 Refreshment break with coffee and tea in the exhibition area

16:30 – 18:15 **INTRODUCTORY PRESENTATIONS AND PANEL DISCUSSION**

**Moderation:** Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group; Prof. Dr. Hans-Christian Reuss, Head of the Chair of Motor Vehicle Mechatronics, IFS, University of Stuttgart, Germany

- **16:30 Electricity as a regenerative commodity in the energy transition and sector coupling – when will wishful thinking become reality?**
  Dr. Ralf Burgdorf, Lead Consultant, BridgingIT GmbH, Germany

- **17:15 Are sector coupling and competition between technologies the keys to success?**

19:30 **Networking dinner at Philippsruhe Castle**
Enjoy a pleasant evening and interesting conversations over dinner with colleagues and speakers.
08:30 – 09:00

KEYNOTE
Moderation: Prof. Dr. Bernhard Geringer, IFA, TU Vienna, Austria

08:30 The powertrain for 2030 – the road to 59 g/km fleet CO₂
Dr. Norbert Alt, Chairman of the Executive Board, FEV Europe GmbH, Germany [in cooperation with FEV Group GmbH, Germany]

09:00 – 10:30

ELECTRIFIED DRIVES
Moderation: Prof. Dr. Bernhard Geringer, IFA, TU Vienna, Austria

09:00 Potential of the methanol-powered SI engine in the hybrid powertrain: a simulative investigation
Prof. Dr. Michael Bargende, Head of the Chair of Automotive Powertrains, IFS, University of Stuttgart, Germany [in cooperation with VKM, TU Darmstadt; FKFS; Opel Automobile GmbH]

09:30 Opportunities for the electrified internal combustion engine
Dr. Graham Conway, Principal Engineer, Southwest Research Institute, USA

10:00 Model-based development of alternative propulsions for HD off-highway applications
Dr. Reza Rezaei, Manager, IAV GmbH, Germany

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

11:00 – 12:30

FUEL CELL DRIVES
Moderation: Dr. Norbert Alt, Chairman of the Executive Board, FEV Europe GmbH, Germany

11:00 Innovative fuel cell system for the medium-size segment
Dennis Backofen, Team Manager, IAV GmbH, Germany

11:30 Fuel cell propulsion system layout
Dr. Stephan Schnorpfeil, Technology Leader, Segula Technologies Group, Germany

12:00 Cost-oriented optimization of fuel cell peripherals for use in heavy commercial vehicles
Dr. Markus Auer, Head of Fuel Cell Project House, MAHLE International GmbH, Germany

12:30 Lunch in the exhibition area

13:30 – 15:00

SYSTEM DESIGN
Moderation: Stephan Rebhan, Senior Vice President Powertrain Technology & Innovation, Vitesco Technologies, Germany

13:30 System thinking – frontloading consumer KPIs of hybrids
Gerald Teuschl, Product Manager Electrification, AVL List GmbH, Austria

14:00 A Systems Engineering approach to electromagnetic compatibility
Dr. Jonas Esch, Team Leader Control Engineering, Schaeffler Engineering GmbH, Germany

14:30 Consideration of battery aging during the powertrain design of a 48V-mild hybrid powertrain
Dominik Geringer, University Assistant, Institute for Powertrains and Automotive Technology (IFA), Vienna University of Technology, Austria

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

15:30 – 16:30

BATTERY DEVELOPMENT PROCESSES
Moderation: Prof. Dr. Hans-Christian Reuss, Head of the Chair of Motor Vehicle Mechatronics, Institute of Automotive Engineering (IFS), University of Stuttgart, Germany

15:30 Challenges in battery development – the advantage of FEV Group’s validation concept
Dr. Michael Stapelbroek, Director Battery Systems, Electronics & Electrification, FEV Europe GmbH, Germany [in cooperation with FEV eDLP GmbH; EVA Fahrzeugtechnik GmbH, both Germany]

16:00 Challenges and new methodologies for battery development starting at cell level
Mareike Schmalz, Project Coordinator, APL Automobil-Prüftechnik Landau GmbH, Germany

16:30 Closing remarks
Sustainability check 2021

/ CHARGING INFRASTRUCTURE
Regulations and customer interests

/ BATTERIES
Technology assessments and developments

/ GRID INTEGRATION
Challenges and costs

Our established ATZlive events The Powertrain of Tomorrow and Grid Integration + Electrified Mobility now take place simultaneously at the same location.

There will be joint keynote lectures and intensive interdisciplinary exchange in a joint panel discussion, during the breaks and at the social evening event. The participants have the possibility to switch to the lectures of the parallel running conference and thus to broaden their perspective even further.

See the program online!

You have the choice: participate on site or virtually via live stream

Due to the current situation created by Covid-19, the Conferences The Powertrain of Tomorrow and Grid Integration + Electrified Mobility will take place as a hybrid event this year.

The live stream package includes all lectures and the panel discussion of both events.

A comfortable event app with live stream offers you Q&A functions, 1:1 video chats with participants, exhibitors and speakers, live surveys and other useful functions, such as your personal digital program overview and a virtual exhibition.

You will find detailed information on our website.
Schaeffler Group

As a leading global supplier to the automotive and industrial sectors, the Schaeffler Group has been driving forward groundbreaking inventions and developments in the fields of motion and mobility for over 70 years. With innovative technologies, products, and services for CO₂-efficient drives, electric mobility, Industry 4.0, digitalization, and renewable energies, the company is a reliable partner for making motion and mobility more efficient, intelligent, and sustainable. The technology company manufactures high-precision components and systems for drive train and chassis applications as well as rolling and plain bearing solutions for a large number of industrial applications.

The Schaeffler Group generated sales of approximately EUR 14.4 billion in 2019. With around 84,200 employees, Schaeffler is one of the world’s largest family companies with approximately 170 locations in over 50 countries. With almost 2,400 patent applications in 2019, Schaeffler is Germany’s second most innovative company according to the DPMA (German Patent and Trademark Office).

Your presentation platform

Take this opportunity to present your latest products and services to the specialist audience: as an exhibitor in our exclusive exhibition and/or as a sponsor with an attractive advertising presentation. Make use of this industry meeting place to make valuable contacts with customers. For information on the various presentation options, please contact:

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Phone +49 611 7878-320
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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 27-01-2021. The participants have the possibility to switch to the parallel running conference and thus broaden their perspective. Virtual participation eliminates the catering during breaks and the evening event.

Date

27 – 28 January 2021

Venue

Congress Park Hanau or virtually
Schlossplatz 1, 63450 Hanau, Germany via live stream

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.

Online Registration and Further Information:

www.atzlive.com/powertrain

Participants

The international MTZ Conference “The Powertrain of Tomorrow” is aimed at managers and experts in powertrain development and electrification. It is a must-attend event for engine and vehicle manufacturers, their suppliers and development partners, teaching staff and engineers from universities, representatives of authorities and associations, and technicians active in this field.

Further Information and Online Registration:

www.atzlive.com/powertrain

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Your contact person

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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.