

## The Powertrain of Tomorrow

The change in the ecosystem as a factor shaping the powertrain

12th International MTZ Conference on Future Powertrains

31 January and 1 February 2018 | Frankfurt/Main | Germany



Simultaneous Interpreting  
German and English

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**ENERGY SOURCES**  
Optimized fuels

**ELECTRIC COMPONENTS**  
Batteries  
and motors

**ELECTRIFIED  
OVERALL SYSTEM**  
From the hybrid  
to the fuel cell

/// KEYNOTE LECTURES **Gerald Killmann, Toyota** | **Uwe Wagner, Schaeffler**

/// PANEL DISCUSSION **Clean air versus climate change – meeting the challenge**

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# The Powertrain of Tomorrow

## WELCOME

The urgent challenges of protecting the climate and reducing air pollution are causing a paradigm shift in the automotive industry. Powertrains must be considered more than ever before as an integrated system consisting of an engine, a transmission and electrification. Over the next decade of automotive engineering, the combination of an internal combustion engine and an electric motor will gain unprecedented importance. In order to develop hybrid powertrains in different markets and for different vehicle segments, it is vital to master the overall system beyond the component level.

One of the focal points of the 12th International MTZ Conference on “The Powertrain of Tomorrow” will be energy sources, in particular optimized fuels. The mobility revolution cannot be successfully completed without intelligent interaction between electrification and synthetic fuels. Electric components, and above all batteries and motors, are another major topic at the conference. Batteries, which play such a key role in electrification, must be designed to be robust, but without neglecting their cost and ecological footprint. Hybrid drive systems span the range from 48-volt to high-voltage technology, thus opening up new possibilities for all vehicle segments. For that reason, the overall electric system is also one of the central topics. We cover all areas from 48-volt concepts to the fuel cell.

On behalf of all those involved as well as our partners Schaeffler and Volkswagen, I would like to invite you to attend the 12th International MTZ Conference on “The Powertrain of Tomorrow”. We look forward to an interesting dialogue with you.

On behalf of the Scientific Advisory Board

Dr. Johannes Liebl

Editor-in-Charge ATZ | MTZ | ATZelektronik



## PARTICIPANTS

The 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 from authorities and associations, and technicians active in this field.

# PROGRAM

WEDNESDAY 31 JANUARY 2018

9:15 **Welcome and opening of the conference**

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

## KEYNOTE LECTURES

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

9:30 **Schaeffler – the system partner for the automotive powertrain of tomorrow**

Uwe Wagner, Senior Vice President R&D Automotive and Industrial, Member of the Management Boards Automotive and Industrial, Schaeffler Technologies AG & Co. KG

10:00 **Fuel cell technology – the key to sustainable mobility**

Gerald Killmann, Vice President R&D2, Toyota Motor Europe, Belgium

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

## FUELS

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Moderator: Thomas Pfund, Senior Vice President R&D Automotive Systems, LuK GmbH & Co. KG

11:00 **Hydrogen – energy of the future?**

Dr. Wolfgang Warnecke, Chief Scientist Mobility, Dr. J. Adolf, Shell Global Solutions (Deutschland) GmbH

11:30 **The use of optimized fuels as a strategy for reducing greenhouse gases and local emissions**

Prof. Dr. Thomas Garbe, Team Leader gasoline and Diesel fuel, M. Hönig, J. Klose, Dr. E. Pott, L. Hentschel, Volkswagen AG; W. Kaszás, H. Bröker, AutoVision GmbH

12:00 **The role of carbon in transport**

Dr. Peter Sauermann, BP Regional Technology Director Europe, BP Europa SE

12:30 Lunch in the exhibition area

## ELECTRIFIED POWERTRAINS

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Moderator: Prof. Dr. Michael Bargende, Director,  
Chair in Automotive Powertrains, IVK, University of Stuttgart

- 14:00 **Scalable propulsion system for electrified powertrains**  
Thomas Pfund, Senior Vice President R&D Automotive  
Systems, LuK GmbH & Co. KG
- 14:30 **MAHLE efficient electric transport – an efficient system  
solution for electrified urban mobility**  
Daniel Rieger, Project Manager, A. Kemle, Dr. A. Elsäßer,  
Dr. M. Warth, Dr. O. Scharrer, MAHLE International GmbH
- 15:00 **AllCharge – a user-centric solution for traction and charging**  
Friedrich Graf, Director Advanced Development  
Engineering Powertrain, Dr. M. Brüll, S. Deinhard,  
Continental Automotive GmbH
- 15:30 Refreshment break with coffee and tea in the exhibition area

## CLEAN AIR VERSUS CLIMATE CHANGE – MEETING THE CHALLENGE

### Introductory lectures and panel discussion

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Moderator: Dr. Johannes Liebl, Editor-in-Charge ATZ | MTZ | ATZelektronik,  
and Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ | ATZelektronik |  
lwd lightweight design

- 16:00 **The future of the internal combustion engine –  
an assessment of the diesel issue**  
Prof. Dr. Thomas Koch, Head of Institute for Internal  
Combustion Engines (IFKM), Karlsruhe Institute of  
Technology (KIT)
- 16:30 **Clean air versus climate change – meeting the challenge**  
Participants: Dr. Norbert Alt, FEV  
Dr. Christian Hey, Hessian Ministry of the  
Environment, Climate Protection, Agriculture  
and Consumer Protection  
Gerald Killmann, Toyota  
Prof. Dr. Thomas Koch, KIT  
Dr. Norbert Merdes, Daimler  
Matthias Zink, Schaeffler

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- 19:30 **Evening of encounters at Depot 1899**  
Enjoy a delightful evening and interesting conversations  
over dinner with colleagues and speakers.

## PROGRAM

THURSDAY 1 FEBRUARY 2018

### FUEL CELL

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Moderator: Prof. Dr. Bernhard Geringer, Director, IFA,  
Vienna University of Technology, Austria

9:00    **Development of the fuel cell powertrain  
for the Honda Clarity Fuel Cell**

Thomas Brachmann, Chief Project Engineer,  
Honda R&D Europe (Deutschland) GmbH;  
K. Shimizu, N. Saito, Honda R&D Co., Ltd., Japan

9:30    **Best of both worlds – fuel cell range extender  
for battery-electric vehicles**

Jürgen Ogrzewalla, Vice President Electronics & Electrification,  
M. Walters, FEV Europe GmbH

10:00    **SOFC EV range extender systems for biofuels**

Jürgen Rechberger, Manager Fuel Cell, M. Reissig,  
AVL List GmbH, Austria

10:30    **Innovative propulsion systems with fuel cells**

Prof. Dr. Manfred Klell, CEO, Dr. A. Trattner,  
HyCentA Research GmbH, Austria

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

### BATTERIES

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Moderator: Dr. Marco Warth, Director Corporate Advanced Engineering  
Mechatronics, MAHLE International GmbH

11:30    **A comparative evaluation on state-of-charge estimation  
methods for lithium-ion batteries of electric vehicles**

Fuliang Huang, Battery Management System Engineer,  
M. Murohoshi, A. Ichinose, T. Sui, Keihin Corporation, Japan

12:00    **A test center for aging analysis on li-ion cells for automotive  
series application – test equipment, test procedures and  
cell aging effects**

Peter Haußmann, Research Assistant, Prof. Dr. J. Melbert,  
Automotive Electronics Research Group,  
Ruhr-Universität Bochum

12:30    Lunch in the exhibition area

## DEVELOPMENT METHODS

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Moderator: Dr. Oliver Maiwald, Senior Vice President,  
Continental Automotive GmbH

13:30 **Development methods for RDE-compliant powertrains**  
Tobias Mink, Team Manager Emission/Functional Integration,  
C. Lensch-Franzen, M. Schäfer, A. Ebel,  
APL Automobil-Prüftechnik Landau GmbH

14:00 **The connection between simulation and testing as the key to the digital transformation**  
Dr. Wolfgang Puntigam, Head of Integrated and Open  
Development, Dr. C. Mayr, G. Lang, AVL List GmbH,  
Austria

14:30 Refreshment break with coffee and tea in the exhibition area

## HYBRID DRIVE SYSTEMS

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Moderator: Prof. Dr. Uwe Dieter Grebe, Executive Vice President  
Global Business Development, Sales and International Operations,  
AVL List GmbH, Austria

15:00 **Innovative thermal management and heat recovery – a combination of technologies for sustainable propulsion**  
Dr. Heiko Neukirchner, Executive Vice President,  
Dr. M. Weise, T. Arnold, V. Ambrosius, IAV GmbH

15:30 **Toyota Hybrid System – technology for today and tomorrow**  
Raf Schuermans, Technical Senior Manager,  
Toyota Motor Europe, Belgium

16:00 **Gasoline hybrid powertrains – future trends**  
Dr. Johannes Scharf, Vice President Gasoline Powertrains,  
Dr. M. Thewes, Dr. T. Uhlmann, Dr. A. Balazs, Dr. M. Nijs,  
S. Lückenbach, M. Görgen, Dr. G. Hellenbroich,  
Dr. F.-W. Speckens, Dr. P. Grzeschik, FEV Europe GmbH;  
Dr. M. Wittler, FEV Consulting GmbH

16:30 **Closing remarks**  
Dr. Johannes Liebl, Editor-in-Charge ATZ | MTZ | ATZelektronik





## THE CONFERENCE IS SUPPORTED BY SCHAEFFLER AG

The Schaeffler Group is a global automotive and industrial supplier. Top quality, outstanding technology, and exceptionally innovative spirit form the basis for the continued success of the company. By delivering high-precision components and systems in engine, transmission, and chassis applications, as well as rolling and plain bearing solutions for a large number of industrial applications, the Schaeffler Group is shaping “Mobility for tomorrow” to a significant degree. Environmentally friendly drives, urban mobility, interurban mobility, and the energy chain are the four focus areas that Schaeffler is actively helping to shape with its own research and development in cooperation with customers and business partners. Around the globe, Schaeffler’s technological expertise, operational excellence, and systems know-how are highly valued.

Products by the Schaeffler Group – high quality components, modules, and system solutions for the future of industry and the automobile – provide an answer to major worldwide megatrends like climate change, globalization, urbanization, and digitalization. They help our customers master the challenges associated with these trends and conduct business successfully. We want it to stay that way. That is the reason for our vision: “As a leader in technology, we combine a passion for innovation with the highest standards of quality to shape the mobility for tomorrow – for a cleaner, safer, and smarter world.”

Schaeffler offers its customers energy-efficient solutions for vehicles with drive trains based on internal combustion engines as well as components and systems know-how for hybrid and electric vehicles. The Automotive division serves as a competence partner of the automotive industry for sustainable mobility and global progress.

The Industrial division supplies rolling bearing solutions for over 60 sectors of industry. The range includes everything from miniature bearings only a few millimeters in width to large-size bearings with an outside diameter of several meters, with smart products and the networking of components coming increasingly to the fore.

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## THE CONFERENCE IS SUPPORTED BY VOLKSWAGEN

For many millions of people, Volkswagen is the epitome of mobility. With its vehicles, technologies and mobility concepts, the brand aims to make people's lives better. As the most successful volume auto-maker in the world, the core brand of the Volkswagen Group not only produces vehicles for customers in more than 150 markets at its production facilities in 14 countries – in 2016, Volkswagen produced about 5.99 million vehicles, including bestsellers such as the Golf, Tiguan, Jetta or Passat. Volkswagen also produces engines and components including manual gearboxes and automatic transmissions as well as genuine spare parts for the aftermarket. Currently, 196,000 people work for Volkswagen across the globe. The brand also has 7,700 dealerships with 74,000 employees. Many financial and other services connected with driving round off the comprehensive Volkswagen range.

With the Transform 2025+ strategy and the pact for the future, Volkswagen has initiated the most comprehensive transformation process in the history of the company – and launched the brand's largest product offensive to date.

At the same time, Volkswagen is forging ahead consistently with the further development of automobile production. Our new claim, which applies throughout the world, is "We make the future real": e-mobility, smart mobility and the digital transformation of the brand are the key strategic topics for the future.

By 2025, Volkswagen plans to take the lead in e-mobility, with 1 million electric cars sold per year. The long-term objective is to assume a leading role in the new world of auto-mobility.

Accompany us and the Volkswagen brand on our way to the new world of auto-mobility.



Volkswagen

[www.volkswagen.com](http://www.volkswagen.com)

MEDIA PARTNER

**MTZ**

## REGISTRATION FEE

€ 1,395.– plus VAT

This includes the conference documentation, coffee breaks, soft drinks, two lunches and the evening reception.

## VENUE

Gesellschaftshaus Palmengarten  
Palmengartenstraße 11  
60325 Frankfurt am Main | Germany

(Parking lot Palmengarten, Siesmayerstraße 61)

## HOTELS

The hotels have room blocks at reduced prices for the participants.

**Please make your reservation quoting the reference  
“The Powertrain of tomorrow” by 19 December 2017 at the  
Mercure or 31 December 2017 at the Hotel ibis.**

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Voltastraße 29  
60486 Frankfurt am Main  
Phone +49 69 7926-0  
Fax +49 69 7926-2707  
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www.mercure.com  
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including breakfast

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# ATZ live

**ATZlive**

**// Spotlight on Powertrain and Vehicle Engineering //**

ATZlive organizes its high-caliber conferences for vehicle and engine specialists together with key representatives from research and industry to ensure that they are tailor-made to the needs of the participants and address the very latest issues. 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.

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# CONFERENCE REGISTRATION

## The Powertrain of Tomorrow

31 January and 1 February 2018 | Frankfurt/Main | Germany

I have read the General Terms and Conditions\* and I would like to register at a cost of € 1,395.– plus VAT.

\* The General Terms and Conditions of ATZlive apply, as published on the website [www.ATZlive.de/AGB](http://www.ATZlive.de/AGB).

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