

# Vienna Motor Symposium 2025

## 46<sup>th</sup> International Vienna Motor Symposium 14 – 16 May 2025

- ▶ Passenger Car & Commercial Vehicle Drive Concepts
- ▶ Hybrid Powertrains
- ▶ E-Drives, E-Axles & E-Components
- ▶ New Engine Concepts
- ▶ Hydrogen Combustion Systems
- ▶ Commercial Vehicle-H<sub>2</sub> Engine, Fuel Cell & Storage
- ▶ LDV-H<sub>2</sub> Engine
- ▶ Strategies for Sustainability
- ▶ Nonfossil Fuels – Application & Evaluation
- ▶ BEV – Battery, Charging & Thermal Management
- ▶ Software (Software Defined Vehicle)

### Virtual Hall

- ▶ Additional lecture videos

## AVL Zalazone Save the Date

Opening Ceremony  
High-Speed-Oval

ZalaZONE Proving Ground

**May 14, 2025**  
**Zalaegerszeg,**  
**Hungary**



**INNOVATIVE, PRODUCTION-READY SOLUTIONS**

# AVL Mobility Engineering

We are a leader in the development of innovative mobility systems, including hydrogen engines, hybrid powertrains, battery electric vehicles, and fuel cells.

With expertise in driving functions, subsystems, and components, we are perfectly set to help you integrate systems into vehicles for production. We also focus on Advanced Driver Assistance Systems and fully automated driving, offer technology consulting and stationary energy application development.





Dear Ladies and Gentlemen,

We are pleased to send you the programme for the 46<sup>th</sup> International Vienna Motor Symposium.

The extensive topics from science, engineering as well as the automotive and supplier industries will again be presented by more than 80 speakers in three lecture halls in the Vienna Hofburg.

The main topics of this year's symposium are once again sustainable energy and solutions for mobility: The entire technology portfolio of electric powertrains, new batteries, fuel cell and combustion engines for hydrogen, hydrogen storage and modern hybrid drives for efficient and high-performance vehicles is covered in the lectures.

The production of climate-neutral fuels, their evaluation in a system analysis and their application are also discussed in detail. Finally, one section is dedicated to the software defined vehicle.

The framework of the event is formed by exciting plenary lectures by leading international personalities on strategic developments by car and commercial vehicle manufacturers and suppliers.

All registered participants will receive access to a web platform on which the recording of the entire lecture programme will be made available online after the event.

In addition, in-depth and further video lectures will be available in "**virtual sessions**" on the web platform during the event days.

The web platform also offers an additional function that allows you to get in touch with other participants ("Chat function").

The latest technologies and developments will also be presented by leading automobile and supplier companies at an exhibition covering an area of around 1,000 sqm with over 40 exhibitors.

The start of our three-day event will be the **reception with the opening of the exhibition** on the first evening, where we cordially invite you and your accompanying person to explore the exhibition.

At the mayor's invitation, you will have the opportunity to end the second day of the conference in a traditional Viennese "**Wine Heuriger**".

For accompanying persons, we offer two exclusive half-day tours to visit interesting sights in and in the surrounding of Vienna.

We look forward to your registration for the symposium and hope to be able to welcome you personally in Vienna.

Best Regards

Univ.-Prof. Dr. Bernhard Geringer  
President of the Austrian Society for Automotive Engineers (ÖVK)

# Vienna Motor Symposium 2025

## 46<sup>th</sup> International Vienna Motor Symposium 14 – 16 May 2025

### GENERAL INFORMATION

**Dates:**

Wednesday,	14 May 2025, 18.00 – 21.00 hrs. Reception and Opening of the Exhibition
Thursday,	15 May 2025, 8.30 – 18.30 hrs. Symposium and Exhibition 15 May 2025, 20.00 hrs. Bus Departure Hofburg 20.30 hrs. "Wine Heuriger" hosted by the Mayor of Vienna
Friday,	16 May 2025, 8.00 – 17.30 hrs. Symposium and Exhibition

**Congress Venue:**

Conference Centre Hofburg Vienna  
Heldenplatz, 1010 Vienna, Austria

**Chairman:**

Univ.-Prof. Dr. B. **Geringer**  
President of the Austrian Society of Automotive Engineers (ÖVK)

**Organizer:**

Austrian Society of Automotive Engineers (ÖVK)  
Elisabethstrasse 26/24, 1010 Vienna, Austria  
Phone +43/1/585 27 41-0  
<https://wiener-motorensymposium.at/en>  
info@oevk.at



To the Website

**Organization of the Symposium:**

The International Vienna Motor Symposium is organized by the Austrian Society of Automotive Engineers (ÖVK) and the Institute of Powertrains and Automotive Technology (IFA), Vienna University of Technology.

## ORGANIZATIONAL INFORMATION

### **Registration:**

The registration is only possible online via <https://wiener-motorensymposium.at/en>  
The General Terms and Conditions as well as the Data Protection Statement can also be found at <https://wiener-motorensymposium.at/en>.

**Registration Fee:** € 2.790,-- incl. 20% VAT  
Registration Fee ÖVK Membership: € 2.688,-- incl. 20% VAT

The registration fee includes the admission to the lectures, the exhibition, the web platform, the symposium documents, reception and exhibition opening, the "Wine Heuriger", lunch on Thursday and Friday, coffee during the breaks as well as bus transfer to the airport at the end of the symposium.

We will confirm receipt of the online registration immediately, but this is not the authorization to participate in the symposium.

A confirmation of registration (incl. invoice) or another information will follow in a few days.

The Motor Symposium is planned as a 3-day face-to-face event.

### **Booking and Cancellation Conditions Symposium Participation:**

Changes and cancellations must be made in writing to [registration@oevk.at](mailto:registration@oevk.at)

For cancellation after **19 March 2025**, we are obliged to request full payment of complete registration fees, as all orders will have been placed.

### **Lecture Duration:**

20 minutes each, followed by 10 minutes' discussion

### **Language of Lectures:**

German and English (simultaneous translation)

### **Conference Papers:**

Lecture texts in electronic form

Proceedings (in printed form) for an additional charge.

### **Exhibition:**

This top-level lecture programme is accompanied by an exhibition at which leading automotive and supplier companies present latest technologies and developments.

If you are interested in an exhibition space, please contact our partner company Media-Plan, email: [mp@media.co.at](mailto:mp@media.co.at).

## ORGANIZATIONAL INFORMATION

### **Web Platform:**

The web platform of the symposium provides information on the lectures, the speakers and the exhibition. From the symposium onwards, the digital congress documents as well as the recordings of the face-to-face sessions and the video presentations of the virtual sessions will be available there for a limited period. Participants will receive their login data for the web platform a few days prior to the symposium.

### **Student Registration:**

We offer Austrian and foreign students a limited number of free student places. Certain conditions must be met if you wish to participate in the symposium.

For more detailed information, please visit our website where you will find the application form:

<https://wiener-motorensymposium.at/en/>

The period for submitting applications will end on **28 February 2025**.

### **Bus Service:**

Friday, 16 May 2025, 17.45 hrs. (at the end of the symposium),  
from entrance Conference Centre Hofburg to Vienna Airport (Schwechat).

Arrival at Vienna Airport approx. 18.30 hrs.

Buses will be marked "Wiener Motorensymposium".

### **Hotel Booking:**

We have pre-reserved hotel allotments for you in hotels of various categories within walking distance of the event location. The booking of hotel rooms is based on the "first come – first serve" principle directly at the hotels. We recommend booking as early as possible. You can find detailed information about the hotels and booking on our website:

<https://wiener-motorensymposium.at/en/information/general>

## EVENING PROGRAMME

### **Opening of the Exhibition with Reception:**

Wednesday, 14 May 2025, 18.00 – 21.00 hrs., registration counter will be open.

### **Evening Event "Wine Heuriger":**

Thursday, 15 May 2025, 20.00 hrs. Bus Departure Hofburg

20.30 hrs. Heuriger Fuhrgaszl-Huber, Neustift am Walde 68, 1190 Vienna

### **Cultural Tickets:**

Tickets for a variety of evening events (concerts, musicals, theater, etc.) can be found on the following website: <https://www.wien.info/en/music-stage-shows>

## SOCIAL PROGRAMME

While the technical programme is being presented to the participants, we offer the accompanying persons two half-day tours of interesting sights in and in the surrounding of Vienna for a surcharge.

Both tours start and end at the Conference Centre Hofburg.

Details can be found online at <https://wiener-motorensymposium.at/en/>.

### **Half-day Tour:**

#### **Journey of Discovery for the 200<sup>th</sup> Birthday of the Waltz King Johann Strauss**

Thursday, 15 May 2025, 9.00 hrs – approx. 13.00 hrs

Discover with us the footsteps of the “Waltz King” Johann Strauss Junior – one of the most important composers of Viennese classical music, whose music still makes hearts beat faster internationally today. From the Hofburg we walk to St. Ulrich at Spittelberg and explore the birthplace of the great artist with interesting stories from his childhood. We then continue to a newly opened exhibition of a special kind. Discover the life of Johann Strauss in an immersive, informative and interactive way. Let yourself be intoxicated by the musical masterpieces and immerse yourself in the world of the 19<sup>th</sup> century. Our path then leads us further to the famous Vienna Stadtpark, where the “Golden Schani”, the Strauss monument, stands, which was the most photographed monument in Vienna even before the Strauss anniversary in 2025. In numerous Viennese concert cafés, piano music by the Waltz King Johann Strauss can still be heard today – the so-called coffee house music is still alive today. On the way back to the Hofburg we pass the oldest coffee house along the Ringstrasse, the Cafe Schwarzenberg.

### **Half-day Tour:**

#### **In the Footsteps of Austrian Ruling Families**

Friday, 16 May 2025, 8.30 hrs – approx. 13.00 hrs

After a short bus ride from the Hofburg through the picturesque “Wienerwald”, we reach the imposing Cistercian monastery of Heiligenkreuz, which was founded in the 12<sup>th</sup> century. The monastery has housed a theological college since 1802, which has been a theological college under papal law since 2007. The first Cistercians called the monastery “Paradisum”, “paradise”. This basic idea is also reflected in the architecture. In the Romanesque-Gothic cloister, many hundreds of red marble columns from 1240 represent the trees of paradise, which end in the buds and tendrils of the capitals. The keystones of the mighty vaults symbolize the floral splendour of paradise. In the middle of the cloister is a lovingly tended garden. We will gain a comprehensive impression of everything from the Rococo frescoes in the sacristy to the lovely Anna Chapel. We visit the whimsical Baroque mortuary chapel, the Gothic chapter house, which is the burial place of the last Babenberg, Frederick the Quarrelsome († 1246), and the colourful glass panes from the 13<sup>th</sup> century that depict the Babenberg family. We will then travel a short distance by bus to the Mayerling hunting lodge – a place steeped in history, embedded in an impressive landscape. It was precisely where the Carmelite monastery church stands today that Crown Prince Rudolf, and his lover Mary Vetsera met their deaths on 30 January 1889. Let us immerse ourselves in the myth that tells of the drama of two young people and the consequences of a love that could not be. The bus will then take us back to the Hofburg.

## WEDNESDAY, 14 May 2025

18:00 **Reception and Opening of the Exhibition**  
Registration until 21:00

## THURSDAY, 15 May 2025

## FESTSAAL

07:30

### Registration

#### PLENARY OPENING SESSION

Chairman: B. **Geringer**, ÖVK

08:30

#### OFFICIAL OPENING

08:45

Markus **Heyn**, Member of the Board of Management Robert Bosch GmbH,  
Chairman Bosch Mobility, Robert Bosch GmbH, Stuttgart:  
**Asia's New Role in Automotive Industry: Regionalization and Technology  
Innovations**

09:05

Matias **Giannini**, CEO, HORSE Powertrain Limited, London:  
**Is There More than One Solution in the Drive Toward Net Zero?**

09:25

Torsten **Eder**, Vice President Electrified Drive Systems,  
Mercedes-Benz Cars Development, Stuttgart:  
**Redefining the Future of Drive Systems**

09:45

Frederik **Zohm**, Executive Board Member for Research & Development /  
Chief Technology Officer MAN Truck & Bus, MAN Truck & Bus SE, Munich:  
**Our Way to Zero Emission**

10:05

**Discussion of the lectures in this session**

10:35

### Coffee Break

#### HYBRID POWERTRAINS 1

Chairman: U. **Grebe**, Vienna University of Technology

11:15

**HD Hybrids – Use of Electrified Axle Concepts for Pragmatic CO<sub>2</sub> Reduction**  
S. **Sagener**, Y. **Cai**, Cummins Ltd., Darlington, UK / Columbus, USA

11:45

**Volkswagen Plug-In Hybrid with Electric Rear Axle**  
D. **Procházka**, K. **Bennewitz**, L. **Hentschel**, J. **Theobald**, D. **Losereit**, K. **Buehring**,  
Volkswagen AG, Wolfsburg

12:15

**Modular Gasoline Engine MGE: Combined Competence for Worldwide Success –  
A Cooperation Engine by Mercedes-Benz and Geely**  
I. **Scholten**, R. **Wang**, K. **Yang**, C. **Shi**, Aurobay Holding, Ningbo, China;  
O. **Vollrath**, T. **Eder**, A. **Rehberger**, H. **Schilling**, Mercedes-Benz AG, Stuttgart

12:45

**Lunch at Hofburg Conference Centre**



**ELECTRIC DRIVES**

Chairman: B. Geringer, ÖVK

- 14:30 **MMA: Next Generation BEV by Mercedes-Benz**  
T. Eder, N. Merdes, T. Stegmaier, C. Pfeffer, A. Aspacher,  
Mercedes-Benz AG, Sindelfingen
- 15:00 **Highly Efficient Dual-Rotor Electric Drives: Setting New Standards  
in Performance and Cost Efficiency**  
A. Rosen, S. Ender, DeepDrive GmbH, Garching
- 15:30 **More Range and Efficiency: The New MEB APP350 Drive from Volkswagen**  
K. Bennewitz, L. Hentschel, J. Böhl, H. Wöhl-Bruhn, S. Vip,  
Volkswagen AG, Wolfsburg
- 16:00 **The First Electric Drive of an Off-Road Icon – Advanced Product Technology  
and Innovative Driving Functions**  
M. Bahne, Magna PT B.V. & Co. KG, Untergruppenbach

16:30 **Coffee Break****NEW ENGINE CONCEPTS**

Chairman: S. Pischinger, RWTH Aachen University

- 17:00 **The New MAN D3872 V12 Engine with a 30-Liter Displacement Balancing  
Sustainability, Cost-Effectiveness and Customer Benefits**  
W. Kübler, B. Huneke, S. Löser, MAN Truck & Bus SE, Nuremberg
- 17:30 **Contributing to the Environment with Internal Combustion Engines Towards  
Carbon Neutrality – Research for Pursuing the Potential of Negative CO<sub>2</sub> and  
Exhaust Gas Emissions**  
T. Yamamoto, H. Yamashita, E. Nakai, M. Hitomi,  
Mazda Motor Corporation, Hiroshima, Japan
- 18:00 **A Cost-Effective Combination of Modern Combustion Engines and Catalyst  
Designs for Worldwide Applications**  
M. Fleiss, H. Björnsson, Aurobay, Sweden;  
R. Brück, L. Pace, Emitec Technologies GmbH, Lohmar

18:30 **End of Programme**20:00 **Transfer to evening event**20:30 **Evening at “Wine Heuriger” at the invitation of the Mayor of Vienna.  
Please bring your invitation with you.**

**PASSENGER CAR ENGINE CONCEPTS**Chairman: C. **Beidl**, Technical University of Darmstadt

- 08:00 **A “Deep Dive” into EU Fleet Regulation**  
D. **Bothe**, P. **Peichert**, E. **Ragnarsson**, Frontier Economics Ltd., Cologne
- 08:30 **Passcar Propulsion Options in EU for 2035 Considering LCA Scenarios**  
N. **Alt**, F. **Richert**, T. **Hülshorst**, M. **Thewes**, A. **Balazs**, FEV, Aachen
- 09:00 **From BEV 2 REEV – A Scalable Powertrain-Platform Concept**  
A. **Fandakov**, M. **Sens**, M. **Riess**, M. **Krause**, M. **Leesch**, K. **Mueller**, T. **Mueller**, IAV GmbH, Berlin

09:30

**Coffee Break****BATTERY & CHARGING MANAGEMENT**Chairman: G. **Brasseur**, Graz University of Technology

- 10:00 **Charging Solutions for Battery Electric Trucks and Busses**  
D. **Liebig**, M. **Gao**, J. **Brombach**, M. **Gee**, F. **Heider**, K. **Weinreich**, A. **Chmura**, T. **Rockstroh**, Shell Global Solutions (Germany) GmbH, Hamburg;  
M. **Gollbach**, SBRS GmbH, Dinslaken
- 10:30 **Advancing Dynamic Wireless Power Transfer: High-Efficiency System Development and Infrastructure Optimization**  
S. **Yatsuzuka**, DENSO CORPORATION, Kariya, Japan;  
Y. **Honma**, Institute of Industrial Science, The University of Tokyo, Japan
- 11:00 **How Supreme BMS Compute Power Can Leverage End-User Experience and xEV Market Success – Presentation of Future Potential for Fast-Charging Applications Through Real-Time-Capable Implementation of Physical Battery Models**  
C. **Weber**, Infineon Technologies AG, Neubiberg;  
M. **Göhring**, Mercedes-Benz AG, Stuttgart
- 11:30 **TP Safety and Aging: Solutions for the Key Challenges of Today’s Batteries from Design, Simulation and Testing**  
M. **Rudolph**, R. **Beykirch**, H. **Löbberding**, A. **Averberg**, H. **Schever**, J. **Vienenkötter**, T. **Kaufmann**, FEV, Aachen

12:00

**Lunch at Hofburg Conference Centre**

**HYBRID POWRTRAINS 2**Chairman: B. **Geringer**, ÖVK

13:30

**The Hybridization of the Iconic Porsche 911**T. **Brandl**, T. **Fruth**, M. **Baumann**, A. **Lang**, R. **Schmidt**, M. **Wessels**, T. **Wasserbäch**,  
Dr. Ing. h.c. F. Porsche AG, Weissach

14:00

**The New Six-Cylinder Boxer Engine of the Porsche 911 T-Hybrid**A. **Weyland**, M. **Baumann**, C. **Pleuß**, R. **Schmidt**, M. **Wessels**, T. **Wasserbäch**,  
Dr. Ing. h.c. F. Porsche AG, Weissach

14:30

**Lamborghini's All New L411 Engine – A High Revving Biturbo V8 Hybrid to Generate Pure NA Feeling**D. **Bizzarri**, L. **Rizzi**, Automobili Lamborghini S.p.A., Italy

15:00

**Coffee Break****PLENARY CLOSING SESSION**Chairman: H. **Eichlseder**, Graz University of Technology

15:30

Todd **Anderson**, VP and Chief Technology Officer,  
PHINIA Inc., Auburn Hills, MI, USA:**A Practical Path to Rapidly Decarbonize Powertrains**

15:50

Holger **Klein**, Chief Executive Officer, ZF Group, Friedrichshafen:**Innovation as the Engine of Transformation: Shaping an Emission-Free Future**

16:10

Daniel Donghui **Li**, CEO and Legal Representative, Geely Holding Group, China:**Global Strategy of Geely for Automotive Products and Cooperations**

16:30

Kai **Grünitz**, Member of the Board of Management of the Volkswagen Brand  
responsible for "Technical Development", Volkswagen AG, Wolfsburg:**Volkswagen in Transition – from "Käfer" to SDV**

16:50

**Discussion of the lectures in this session**

17:15

**CLOSING ADDRESS**

17:30

**End of Programme**

17:45

**Bus Transfer** from Heldenplatz (Hofburg Conference Centre)  
to Vienna Airport (Schwechat)

08:30

Plenary Opening Session at FESTSAAL

Live Broadcast at GALERIE

10:35

**Coffee Break**

**COMMERCIAL VEHICLE DRIVE CONCEPTS**

Chairman: S. **Pischinger**, RWTH Aachen University

11:15

**Practical Usability of Emission Free Heavy Duty Powertrains**

K. **Béres**, R. **Olszowka**, Akkodis, Fellbach

11:45

**Pathways Towards Low CO<sub>2</sub> and NO<sub>x</sub> Emissions – Demonstration of a Heavy-Duty Hybrid Powertrain**

C. **Bitsis**, T. **Briggs**, S. **Patil**, Southwest Research Institute, San Antonio, TX, USA

12:15

**Truck to Zero: Strategic Rollout and Heavy Electric Trucks in 24/7 Operational Use. Accelerators and Challenges for the Industrial Transformation**

E. **Christ**, MOSOLF SE & Co. KG, Kirchheim unter Teck;

M. **Müller**, J. **Schenk**, Magility GmbH, Wendlingen am Neckar

12:45

**Lunch at Hofburg Conference Centre**

**COMMERCIAL VEHICLE-H<sub>2</sub> ENGINE 1**Chairman: H. **Eichlseder**, Graz University of Technology

14:30

**Is 30 Bar Mean Effective Pressure the Limit for Spark Ignited Commercial Hydrogen Engines?**M. **Thewes**, D. **van der Put**, L. **Virnich**, A. **Dhongde**, A. **Boberic**, FEV, Aachen;  
P. **Zimmer**, S. **Pischinger**, Chair of Thermodynamics of Mobile Energy Conversion Systems, RWTH Aachen University

15:00

**Cummins 6.7L Direct Injection, Lean Burn H<sub>2</sub> Engine for Medium- and Heavy-Duty Commercial Vehicles**L. **Liu**, G. **Suo**, Cummins Ltd, Beijing, China; Y. **Zhang**, Cummins Inc, Columbus, USA;  
H. **He**, Cummins Ltd, Hubei, China; P. **Leggott**, Cummins Inc, Darlington, UK;  
V. **Sethi**, Cummins Ltd, Pune, India

15:30

**H<sub>2</sub>ICE: An Additional Contribution to Defossilization**C. **Barba**, J. **Lehmann**, M. **Conitz**, D. **Erforth**, Daimler Truck AG, Stuttgart

16:00

**Developing Hydrogen Fueled SI-ICE for Heavy Duty Applications**J. **Ängeby**, SEM AB, Åmål; J. **Wärnberg**, Volvo AB, Gothenburg;  
M. **Richter**, Ö. **Andersson**, P. **Tunestål**, Lund University

16:30

**Coffee Break****COMMERCIAL VEHICLE-H<sub>2</sub> ENGINE 2 AND STORAGE**Chairman: A. **Kulzer**, University of Stuttgart

17:00

**A 17L LPDI H<sub>2</sub> ICE Concept for the Very Heavy Applications by Volvo Group – Update**J. **Wärnberg**, J. **Eismark**, L. **Andersson**, O. **Garnemark**, F. **Rahm**,  
Volvo Group Trucks Technology, Powertrain Strategic Development, Gothenburg

17:30

**Commercial Hydrogen Engine with HPDI: Roadmap to High Efficiency, Zero CO<sub>2</sub> and Zero Pollutants**A. **Arnberger**, AVL List GmbH, Graz; E. **Olofsson**, Scania AB, Södertälje;  
D. **Mumford**, Cespira, Vancouver, Canada

18:00

**Liquid Hydrogen as Attractive Energy Storage Solution for Railway Applications**M. **Eiböck**, P. **Loidolt**, D. **Jeitler**, T. **Stepan**, SAG New Technologies GmbH, Lend

18:30

**End of Programme**

20:00

**Transfer to evening event**

20:30

**Evening at “Wine Heuriger” at the invitation of the Mayor of Vienna.  
Please bring your invitation with you.**

**HYDROGEN COMBUSTION SYSTEMS**Chairman: H. **Eichlseder**, Graz University of Technology

08:00

**Emission Concept and Calibration for a Lean Burn Hydrogen Engine Hybrid Powertrain in a Passenger Car Application**

R. **Pelzetter**, M. **Peppler**, S. **Hoffmann**, Hyundai Motor Europe Technical Center GmbH, Rüsselsheim; B. **Shin**, C. **Yu**, T. W. **Hwang**, J. H. **Lee**, J. K. **Yun**, S. B. **Kim**, Hyundai Motor Company, Namyang, South Korea; T. **Rabe**, C. **Schück**, E. **Schünemann**, Robert Bosch GmbH, Stuttgart; P. **Gaillard**, E. **Laigle**, C. **Chaillou**, Aramco Overseas Company, Rueil-Malmaison; C. **Tomanik**, Umicore AG & Co. KG, Hanau

08:30

**Innovative H<sub>2</sub>-DI Injector with Cycle-Specific Injection Patterns for Next-Generation Light Aircraft Propulsion**

C. **Reitmayr**, P. **Hofmann**, Institute of Powertrain and Automotive Technology (IFA), Vienna University of Technology; O. **Weber**, J. **Leberwurst**, J. **Broz**, Schaeffler Technologies AG & Co. KG, Herzogenaurach; F. **Zahradnik**, Austro Engine GmbH, Wiener Neustadt

09:00

**Understanding Lubricant Induced Pre-Ignition in Hydrogen Internal Combustion Engines**

D. **Bansal**, R. **Hogendoorn**, C. **Tang**, Chevron Oronite LLC, USA; M. **Schneider**, P. **Grabner**, Institute of Thermodynamics and Sustainable Propulsion Systems (ITnA), Graz University of Technology; G. **Lurf**, N. J. **Kunder**, M. **Wieser**, AVL List GmbH, Graz

09:30

**Coffee Break****COMMERCIAL VEHICLE FUEL CELL**Chairman: A. **Kulzer**, University of Stuttgart

10:00

**Holistic Optimization of Heavy Duty Trucks with Fuel Cell Hybrid Powertrains**

T. **Stoll**, H.-J. **Berner**, FKFS, Stuttgart;  
A. **Kulzer**, Institute of Automotive Engineering, University of Stuttgart

10:30

**Fuel Cell Powered Commercial Vehicles: Solutions of the Next Generation Vehicles**

R. **Steinek**, A. **Schenk**, J. **Rechberger**, R. **Döbereiner**, AVL List GmbH, Graz

11:00

**Next Generation Fuel Cell Engines: Breakthrough in Efficiency and Performance for Heavy-Duty Long-Haul Trucking**

N. **Loughlan**, T. **Braun**, N. **Weidler**, S. **Hollnaicher**, J. **Sang**, J. **Blum**, M. **Zubel**, J. **Köhler**, cellcentric, Kirchheim unter Teck

11:30

**Robust Fuel Cell Vehicle for Mining and Construction Environment**

C. **Zinner**, M. **Weber**, P. **Pertl**, HyCentA Research GmbH, Graz;  
B. **Lechner**, C. **Doppler**, Virtual Vehicle Research GmbH, Graz

12:00

**Lunch at Hofburg Conference Centre**

**LDV-H<sub>2</sub> ENGINE**Chairman: U. **Grebe**, Vienna University of Technology

13:30

**H<sub>2</sub> Engine Hybrid Powertrain – Attractive Solution for Future Light Commercial Vehicles**J. N. **Geiler**, E. **Schünemann**, Power Solutions, Robert Bosch GmbH, Stuttgart;  
C. **Weber**, K. M. **Springer**, Ford-Werke GmbH, Cologne

14:00

**Development of Hydrogen Direct Injection System as Retrofit Solution for Diesel-Based Light Commercial Vehicles**R. **Golisano**, F. C. **Pesce**, S. **Trimboli**, Dumarey Automotive Italia SpA, Torino;  
G. **De Paz Alcolado**, Horse Powertrain Ltd, Valladolid; O. **Coureau**, Renault Group, Guyancourt; P. **Gaillard**, Aramco Overseas, Paris

14:30

**Optimizing Emission Control System for a H<sub>2</sub>-ICE Powertrain Concept for a Light-Commercial Vehicle to Meet Stringent Euro 7 Standards**E. **Laigle**, C. **Chaillou**, P. **Gaillard**, Aramco Overseas Company, Rueil-Malmaison;  
D. **Baralon**, PHINIA, Blois; J. **Hinault**, A. **Leclerc**, CERTAM, Saint-Étienne-du-Rouvray; A. **Chiffey**, F. **Moreau**, Johnson Matthey, Royston; J. **Goja**, A. **Wille**, NGK, Kronberg

15:00

**Coffee Break**

15:30

Plenary Closing Session at FESTSAAL

LIVE BROADCAST AT GALERIE

17:30

**End of Programme**

17:45

**Bus Transfer** from Heldenplatz (Hofburg Conference Centre)  
to Vienna Airport (Schwechat)

08:30

**Live Broadcast**  
of the Plenary Opening Session

10:35

**Coffee Break****STRATEGIES FOR SUSTAINABILITY**Chairman: C. **Beidl**, Technical University of Darmstadt

11:15

**Energy Transition in Transportation: Clean Power Comes Out of the Grid at Any Time and as Much as We Need – Right?**W. **Tillmetz**, Ulm University

11:45

**Limits of a One-Dimensional Technology Strategy – The Influence of the Electrical Energy System on Electromobility**T. **Koch**, O. **Weber**, P. **Weber**, KIT, Karlsruhe

12:15

**Pathways to the Decarbonization of Oceangoing Vessels – From Hydrogen Engines to On-Board Carbon Capture Concepts**A. **Wimmer**, N. **Wermuth**, Institute of Thermodynamics and Sustainable Propulsion Systems (ITnA), Graz University of Technology;M. **Malin**, G. **Pirker**, LEC GmbH, Graz

12:45

**Lunch at Hofburg Conference Centre**



**NEW POWERSPORTS-DRIVES & NON FOSSIL FUEL APPLICATIONS**Chairman: W. **Böhme**, ÖVK

14:30

**Sustainable Drive Development for Powersports Applications**S. **Meyer-Salfeld**, S. **Arndt**, BRP-Rotax GmbH & Co KG, Gunsikirchen;  
M. **Schermann**, BRP-Rotax Vienna GmbH, Kottlingbrunn

15:00

**Innovative Motorsport Powertrains with Sustainable Fuels**P. **Schöggel**, AVL List GmbH, Graz

15:30

**Use of Sustainable Aviation Fuels in a Compression-Ignition Piston Aircraft Engine**C. **Reitmayr**, F. **Kleissner**, P. **Hofmann**, Institute of Powertrain and Automotive Technology (IFA), Vienna University of Technology;  
F. **Zahradnik**, Austro Engine GmbH, Wiener Neustadt

16:00

**Alternative Fuels: A Critical Part of the Automotive Decarbonization Pathway**G. **Dober**, B. **Gomot**, PHINIA, Luxembourg; G. **Meissonnier**, O. **Trotignon**,  
N. **Cezon**, C. **Barlet**, PHINIA, France; M. **Passos**, PHINIA, Brazil;  
G. **Scott**, PHINIA, USA; D. **Moreno**, PHINIA, Mexico

16:30

**Coffee Break****ELECTRIC AXLES**Chairman: P. **Hofmann**, Vienna University of Technology

17:00

**Key Components for Performance and Efficiency in the E-Powertrain**C. **Hagauer**, Miba Frictec GmbH, Roitham am Traunfall;  
R. **Hellein**, Miba Sinter Austria GmbH, Vorchdorf

17:30

**Portfolio in Motion – New Schaeffler Electric Axle Drives**C. **Dassler**, A. **Kinigadner**, Schaeffler Technologies AG & Co. KG, Herzogenaurach

18:00

**On the Challenges of High-Speed Electric Powertrain and the Garrett Way to Address Them**P. **De Araujo**, Garrett Motion SAS, France; H. **Zheng**, Garrett Motion GmbH, Germany; S. **Jordan**, F. **Tomanec**, J. **Pikula**, A. **Borra**, M. **Rakoci**, Garrett Motion s.r.o., Czech Republic; A. **Bouaita**, Garrett Motion Sarl, Switzerland

18:30

**End of Programme**

20:00

**Transfer to evening event**

20:30

**Evening at “Wine Heuriger” at the invitation of the Mayor of Vienna.  
Please bring your invitation with you.**

**BEV – THERMAL MANAGEMENT**

Chairman: P. Hofmann, Vienna University of Technology

- 08:00 **Efficient Thermal Management – Key Technology for Cost-Optimized Electric Vehicles**  
U. C. Blessing, L. Art, T. Möllert, Mahle Thermal, Stuttgart
- 08:30 **Holistic Approach for Thermal Energy Management of Battery Electric Vehicles**  
H. Chakida, DENSO CORPORATION, Kariya, Japan
- 09:00 **Compact Double-Sided Cooling for High-Current-Density 800V SiC Power Module from BorgWarner**  
M. Strassburg, V. Iyappan, BorgWarner, Nuremberg;  
T. Alfermann, BorgWarner, Kokomo, IN, USA;  
H. Nanjundaswamy, J. Deussen, A. Mayer, BorgWarner, Auburn Hills, MI, USA

09:30 **Coffee Break****NONFOSSIL FUELS – EVALUATION**

Chairman: W. Böhme, ÖVK

- 10:00 **Energy Storage Assessment Towards Lowest Life Cycle CO<sub>2</sub> Footprint**  
J. Op de Beeck, OPmobility, Belgium;  
O. Scandola, T. Campenon, L. Duez, Y. Raynaud, OPmobility, France
- 10:30 **Hydrogen, Methanol or Ammonia, an Evaluation from Production to Energy Conversion**  
M. Sens, M. Riess, A. Fandakov, J. Brauns, P. Grigoriadis, M. Roehle, T. Mueller, IAV GmbH, Berlin
- 11:00 **Methanol Economy Towards Carbon Neutrality**  
Y. Shen, Zhejiang Geely Holding Group Co., Ltd, Hangzhou, China
- 11:30 **Unlocking the Potential of eFuels – Market Volumes to be Expected and Resulting CO<sub>2</sub> Reductions**  
L. Mauler, C. Prié, Porsche Consulting GmbH, Stuttgart;  
A. Siemens, F. Ehrat, Porsche AG, Stuttgart-Zuffenhausen;  
T. Block, eFuel Alliance e.V., Berlin

12:00 **Lunch at Hofburg Conference Centre**

**SOFTWARE (SDV) AND E-COMPONENTS**Chairman: L. **Eckstein**, RWTH Aachen University

- 13:30 **xONEsolutions: Redefining EV Powertrains with Future-Ready Architectures and Technologies for Maximum Cost Savings**  
K. **Wawra**, hofer powertrain, Vienna
- 14:00 **4SDV: A Holistic Approach to Safety and Security in Software-Defined Vehicles**  
H. **Karaçali**, TTTech Auto, Izmir, Türkiye
- 14:30 **CARIAD Software Platform Strategy for the Volkswagen Group's Electric Driving System**  
S. **Fischer**, CARIAD, Mönshheim; T. **Schneider**, CARIAD, Kassel;  
M. **Lachmayr**, CARIAD, Ingolstadt; S. **Gruner**, CARIAD, Wolfsburg

15:00 **Coffee Break**

15:30

**Live Broadcast**  
of the Plenary Closing Session

17:30 **End of Programme**17:45 **Bus Transfer** from Heldenplatz (Hofburg Conference Centre)  
to Vienna Airport (Schwechat)

# VIRTUAL HALL

Due to the large number of interesting and high-quality submissions, we are pleased to be able to present further videos in a virtual hall. These videos are only available to the participants online on the web platform during and after the Motor Symposium in addition to the lectures in three lecture halls in the Vienna Hofburg.

## E-DRIVES & E-COMPONENTS

### **A Step Beyond Two, Next Generation Multilevel Traction Inverter with Clean Wave Technology**

H. **Nanjundaswamy**, J. **Deussen**, A. **Mayer**, BorgWarner, Auburn Hills, MI, USA;  
A. **Apelsmeier**, BorgWarner, Nuremberg;  
L. **Louco**, BorgWarner, Asheville, NC, USA;  
K. **Schten**, BorgWarner, Kokomo, ID, USA;  
P. **David**, BorgWarner, Bascharage

### **Electric Motor Design for Circular Economy**

S. **Mafri**, V. **Madonna**, C. M. **Maria Meano**, K. F. **Hansen**, F. **Magni**,  
Dumarey Automotive Italia, Torino;  
A. **Tenconi**, Department of Energy "Galileo Ferraris", Politecnico di Torino

### **Freudenberg Sealing Technologies Thermal Barriers: A Variety of Different Solutions to Make Future of E-Vehicle Safe**

P. **Fervier**, Freudenberg Sealing Technologies, Pinerolo

### **Active Reduction of Noise Emissions from Electric Drives**

D. **Schubert**, MdynamiX AG, Munich;  
S. **Hecker**, S. **Sentpali**, University of Applied Sciences Munich

## EMISSIONS & LEGISLATION

### **Optimizing Tire Wear Particle Emission Measurement: Insights from Outer Drum Testing with an Enclosed System**

L. **Schubert**, C. **Lex**, M. A. **Arias Torres**,  
Institute of Automotive Engineering (FTG), Graz University of Technology;  
S. **Bigl**, G. **Steiner**, AVL List GmbH, Graz

### **New Methodological Approach for Determining Historical and Forecasting Future TTW Emissions from Country-Specific Vehicle Fleets**

G. **Lischka**, W. **Tober**,  
Institute of Powertrain and Automotive Technology (IFA), Vienna University of Technology

### **Influence of Vehicle Mass on Real-World Tailpipe Emissions from over 1000 Vehicles**

F. **Leach**, University of Oxford;  
N. **Molden**, Emissions Analytics, UK

## ENERGY STORAGE

### **Optimal Configuration of a High-Pressure Hydrogen Tank**

S. C. Konradt, J. C. Jeske, A. M. Müller, H. S. Rottengruber,  
Otto-von-Guericke University, Magdeburg

### **Battery Aging in Practice: Analysis of over 7,000 Vehicles Provide Deep Insights into Battery Life and Vehicle Residual Value**

M. Hackmann, H. Knörzer, J. Pfeuffer, P. Jeckel,  
P3 Group, Stuttgart

## FC OPTIMIZATION

### **Balance of Plant Optimization to Enhance Cooling Performance and Efficiency in FCEV**

C. Frühwirth, R. Lorbeck, E. Schutting, H. Eichlseder, Institute of Thermodynamics and Sustainable Propulsion Systems (ITnA), Graz University of Technology

### **Designing at the Limits – Firefighting Vehicles with Fuel Cell Drive**

B. Lechner, C. Doppler, A. Romero, R. Schruth, M. Waltenberger,  
Virtual Vehicle Research GmbH, Graz;  
W. Luftensteiner, Rosenbauer International AG, Leonding;  
R. Balbach, AC agility consulting GmbH, Altmünster

## OPTIMIZATION ICE & HYBRID

### **Predictive Energy Management Strategy for Dominant-Electric Hybrid Electric Vehicles**

S. Metzler, Mercedes-Benz AG, Stuttgart / Institute of Powertrain and Automotive Technology (IFA), Vienna University of Technology;  
F. Winke, M. Jungen, S. Schmiedler, Mercedes-Benz AG, Stuttgart;  
P. Hofmann, B. Geringer, Institute of Powertrain and Automotive Technology (IFA), Vienna University of Technology

### **Analysis of the Piston-Bore-Interface with Regard to Friction, Combustion Anomalies and Oil Consumption on a Hydrogen Engine**

P. Grabner, K. Gschiel, H. Eichlseder, Institute of Thermodynamics and Sustainable Propulsion Systems (ITnA), Graz University of Technology;  
H. Hick, P. Kopsch, Institute of Machine Components and Methods of Development (IME), Graz University of Technology

The Austrian Society of Automotive Engineers (ÖVK) is the largest association of its kind in Austria, which aims to promote the sensible application of automotive engineering. It brings together engineers and experts from industry, business, government, authorities, universities, engineering schools, associations and clubs.

Furthermore, scientific events, above all the annual **International Vienna Motor Symposium**, are intended to increase and promote the level of knowledge of the technicians who work in this field.

## ÖVK LECTURES

Please find below the ÖVK lectures that are still taking place in the current season:  
All lectures are given in German.

VIENNA	GRAZ	STEYR
<p>Tuesday, 04.03.2025 <b>FORMEL 1 – ENTWICKLUNGSTRENDS UND INNOVATIVE LÖSUNGEN FÜR 2025/2026</b> Prof. Dr. Peter Schöggel AVL List GmbH</p>	<p>Wednesday, 29.01.2025 <b>DEKARBONISIERUNG DES BUSVERKEHRS: TECHNOLOGIE-AUSWAHL, STANDORT-ENTSCHEIDUNGEN UND UMLAUFPLANUNG MIT HILFE MATHEMATISCHER OPTIMIERUNG</b> Nathalie Frieß, MSc Universität Graz</p>	<p>Thursday, 06.02.2025 <b>DIE NÄCHSTE EVOLUTIONSSTUFE DER AUDI V6-TFSI-MOTOREN: MOTORENTWICKLUNG IM SPANNUNGSFELD VON PERFORMANCE UND NACHHALTIGKEIT</b> Dr. Anton J. Kerckhoff AUDI AG</p>
<p>Tuesday, 11.03.2025 <b>DER VOLKSWAGEN PLUG-IN-HYBRID DER ZWEITEN GENERATION – NEUE FAHRZEUGFUNKTIONEN UND TECHNIKKOMPONENTEN FÜR EIN FAHRERLEBNIS AUF NEUEM NIVEAU</b> Dr. Jörg Theobald Volkswagen AG</p>	<p>Wednesday, 05.03.2025 <b>PRODUKTNACHHALTIGKEIT IM AUTOMOBILBAU – VORGEHENSWEISE UND MASSNAHMEN</b> Dr. Jürgen Fröschl BMW Group</p>	<p>Thursday, 03.04.2025 <b>OPTIMIERUNG DER EFFIZIENZ VON BEV-LKW MIT SCHWERPUNKT AUF FAHRZEUGWÄRME- UND ENERGIEMANAGEMENT</b> Dipl.-Ing. Josef Schöffler Dipl.-Ing. Julian Bodory Magna Powertrain Engineering Center Steyr GmbH &amp; Co KG</p>
<p>Tuesday, 08.04.2025 <b>ELEKTRONIK-ENTWICKLUNG „MADE IN AUSTRIA“</b> Dipl.-Ing. Josef Honeder BMW Group Werk Steyr</p>	<p>Wednesday, 19.03.2025 <b>BENCHMARK VON SERIENFAHRERASSISTENZSYSTEMEN, FAHRER-FAHRZEUG-INTERAKTION UND ZUKÜNFTIGE ENTWICKLUNGSBEDARFE</b> Assoc.Prof. Dr. Arno Eichberger TU Graz</p>	
<p>Tuesday, 27.05.2025 <b>DIE ENERGIEWENDE UND IHRE AUSWIRKUNG AUF MOBILITÄT UND KRAFTSTOFFE DER ZUKUNFT</b> Univ.-Prof. Karl Rose ehem. Chefstrategie, ADNOC, Abu Dhabi, Universität Graz</p>	<p>Wednesday, 02.04.2025 <b>THE FUTURE OF HIGH-PERFORMANCE LARGE ENGINE SYSTEMS</b> Univ.-Prof. Dr.-Ing. Nicole Wermuth LEC GmbH / TU Graz</p>	

## ÖVK WEBSITE

You can find further information about the ÖVK lectures and membership on our website:





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