

Heavy-Duty, On- and Off-Highway Engines 2024

Shaping the future of heavy-duty engines

12 – 13 November 2024
Eisenach, Germany

FACTORY TOUR

Bell Equipment
(Deutschland) GmbH
and Emitec
Technologies GmbH



KEYNOTE SPEAKER

Rolf Brück, Emitec Technologies GmbH

KST.

Shaping the future of heavy-duty engines

/ SUSTAINABILITY

Exhaust aftertreatment, alternative fuels, improving efficiency

/ DRIVE SYSTEMS

Fuel cells, hybrid drive systems, internal combustion engines

/ VEHICLE COMPONENTS

Valve trains, supercharging systems, fuel tank systems

HIGHLIGHT

Tour of the Bell Equipment (Deutschland) GmbH and Emitec Technologies GmbH plants



Dr. Alexander Heintzel
Editor-in-Chief ATZ | MTZ Group,
Springer Nature

Welcome

Shaping the future of heavy-duty engines will, more than anything else, require the right framework conditions. There will not be an obligation to use a particular technology, as the number of applications and types of use is simply too great. While construction machines in urban areas, for example, can certainly be electrified, there will not be electric alternatives for ships available in the near future. Long periods of operation, TCO, and difficult operating conditions require a wide variety of solutions. This makes it all the more important to verify the applications individually and make them sustainable, whether it is through new technologies or by switching to different sources of energy.

At the MTZ Conference “Heavy-Duty, On- and Off-Highway Engines”, the developers and designers of engines for commercial vehicles, mobile machinery, and marine and stationary equipment will find information on the very latest developments. The 19th conference will be supplemented by a tour of Bell Equipment (Deutschland) GmbH and Emitec Technologies GmbH.

We look forward to your participation in the conference.

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

Heavy-Duty, On- and Off-Highway Engines

Manufacturers of heavy-duty engines and related components face mounting pressures: they are expected to meet rising demands for engine output, while also reducing fuel consumption, emissions, and assembly space.

New concepts for engines, emission reduction, and drivetrain optimization are called for in order to overcome these challenges. Combining presentations, in-depth discussions, and networking possibilities, the international MTZ Conference “Heavy-Duty, On- and Off-Highway Engines” offers you the ideal platform.



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.



Prof. Dr. Peter Eilts
Technical University
of Braunschweig

Scientific Director of the Conference

David Bennet
Ricardo plc

Rolf Brück
Emitec Technologies GmbH

Prof. Dr. Bert Buchholz
University of Rostock

Dr. Heiner Bülte
DEUTZ AG

Bernd Danckert
ICCL – Integrated Consulting
Company GmbH

Dr. Volker Gross
Liebherr-Components Colmar SAS

Dr. Alexander Heintzel
Editor-in-Chief ATZ | MTZ Group,
Springer Nature

Dr. Michael Krüger
Robert Bosch GmbH

Werner Kübler
MAN Truck & Bus SE

Dr. Andreas Lings
Woodward L'Orange GmbH

Börge Nielsen
Daimler Truck AG

Prof. Dr. Gerhard Reiff
KST-Motorenversuch GmbH & Co. KG

Dr. Hans-Josef Schiffgens

Peter Thomas
Tenneco GmbH

Dr. Heike Többen
Purem GmbH

Martin Urban
Rolls-Royce Solutions GmbH

Dr. Ioannis Vlaskos
Winterthur Gas & Diesel Ltd.

Dr. Wolfgang Warnecke
Shell Deutschland GmbH

Dr. Marco Warth
MAHLE GmbH

08:45 **Welcome and opening of the conference**
Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group,
Springer Nature, Germany

09:00 – 10:30

THE FUTURE OF HEAVY-DUTY ENGINES

Moderation: Prof. Dr. Peter Eilts, Director, Institute of Internal Combustion
Engines (ivb), Technical University of Braunschweig, Germany

- 09:00 **Global emissions legislation and solutions – status quo and outlook**
Rolf Brück, Managing Director, Emitec Technologies GmbH, Germany
- 09:30 **New DEUTZ TCD3.9 and TCD4.0 engines for mobile machinery applications**
Dr. Paul Grzeschik, Head of Design, DEUTZ AG, Germany
- 10:00 **Enabling diesel-like performance in HD H₂-ICE via a sophisticated combustion system solution**
Emmanuella Sotiropoulou, Vice President, Prometheus Applied Technologies, LLC, USA [in cooperation with Altronic, LLC, USA; Hoerbiger Wien GmbH, Austria]

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

11:00 – 12:30

COMPONENTS FOR HYDROGEN DRIVES

Moderation: Dr. Michael Krüger, Senior Vice President
Propulsion and Environment, Robert Bosch GmbH, Germany

- 11:00 **Supercharger boosting applied to H₂-ICE for heavy-duty application**
Nicola Andrisani, Engineering Manager Innovation, Eaton srl, Italy
- 11:30 **Modular high-flow gaseous fuel injector for commercial vehicle engines and fuel cells**
Simon Coster, Senior Engineering Manager, Product Engineering Commercial Vehicles, PHINIA Inc., UK
- 12:00 **Dedicated Power Cylinder Unit (PCU) for hydrogen combustion conditions**
Dr. Fabian Ruch, Manager Design and Analysis, Tenneco Powertrain, Germany

12:30 Lunch in the exhibition area

14:00 – 16:00

SOLUTIONS FOR EMISSION REDUCTION

Moderation: Rolf Brück, Managing Director,
Emitec Technologies GmbH, Germany

- 14:00 **Emission simulation as a tool for the layout of exhaust aftertreatment systems for H₂-ICE engines**
Manuel Werner, Development Engineer, Emission & Air Solutions, Purem GmbH, Germany
- 14:30 **Investigation of the particle loading of an SDPF at low load cycles and in different DOC activities**
Niklas Prchal, Research Associate, Institute of Vehicle Propulsion Systems (LAF), University of Kaiserslautern-Landau (RPTU) [in cooperation with J.M. Voith SE & Co. KG; former Technical University Kaiserslautern], Germany
- 15:00 **Exhaust ATS for HD H₂ internal combustion engines to reach ultra-low NO_x emissions**
Dr. Mirko Pfeifer, Research, Development & Simulation Catalysts, Dinex Deutschland GmbH, Germany
- 15:30 **Deep-reinforcement-learning-based application of exhaust gas aftertreatment control for H₂ engines**
Dirk Itzen, Research Associate, Chair of Automotive Powertrain Systems, Institute of Automotive Engineering (IFS), University of Stuttgart [in cooperation with FKFS Research Institute for Automotive Engineering and Powertrain Systems Stuttgart], Germany

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

www.atzlive.com/heavyduty



16:00 Welcome and introduction to the factory tour of the Bell Equipment (Deutschland) GmbH and Emitec Technologies GmbH plants

Stephan Giese, General Plant Manager,
Bell Equipment (Deutschland) GmbH, Germany;
Silvio Göring, Head of Operations,
Emitec Technologies GmbH, Germany

16:15 Refreshment break with coffee and tea in the exhibition area

16:45 Bus transfer or individual travel to the factory tour

HIGHLIGHT

17:00 Factory tour of the Bell Equipment (Deutschland) GmbH and Emitec Technologies GmbH plants

Bell Equipment (Deutschland) GmbH founded the Eisenach plant in 2003 and produces 7 different types of dump trucks with rated payloads of 20 – 50 tonnes there.

In Eisenach, around 500 – 600 dump trucks are manufactured every year and delivered to customers in the northern hemisphere. 2024 is the year in which Bell is celebrating its 70th anniversary.

Emitec Technologies GmbH has been mass-producing metal catalyst substrates for two-wheeled vehicles, cars, and commercial vehicles since 2000.

Directly adjacent to the production plant is a state-of-the-art testing center with engine test benches and roller dynamometers for cars and trucks.



19:00 Bus transfer or individual travel to the networking dinner

19:30 Networking dinner at the automobile welt eisenach museum



Enjoy a pleasant evening and interesting conversations during a tour of the museum's exhibition and over dinner with colleagues and speakers.

08:30 – 10:00

MULTI-FUEL / DUAL-FUEL ENGINES

Moderation: Dr. Hans-Josef Schiffgens

- 08:30

Multi-fuel cylinder head development for commercial powertrains defined by charge motion design
Dr. Avnish Dhongde, Technical Project Manager, FEV Europe GmbH, Germany
- 09:00

Numerical and experimental analysis of a medium-pressure gas direct injector on a marine medium-speed dual-fuel engine
Jules Christopher Dinwoodie, Research Assistant, Department of Piston Machines and Internal Combustion Engines (LKV), University of Rostock [in cooperation with FVTR GmbH], Germany
- 09:30

Innovative CRFD workflow for efficient dual-fuel engine modeling
Dr. Stéphanie Schlatter, Simulation Expert, Combustion and Flow Solutions GmbH, Switzerland

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

10:30 – 12:00

NEW FUELS

Moderation: Dr. Heiner Bülte,
Head of Performance & Emissions, DEUTZ AG, Germany

- 10:30

Renewable fuels as a fast-track ticket to sustainability in heavy-duty industry
Mats Hultman, Head of OEM Partnerships, Neste Corporation, Sweden;
Robert Welz, Senior Manager PowerGen Engine Support, Rolls-Royce Solutions GmbH, Germany
- 11:00

WaVe: H₂ internal combustion engine – LPDI combustion process development for an increase in power density
Martin Weber, Project Manager Commercial Vehicle Powertrain, IAV GmbH [in cooperation with Fraunhofer Institute for Chemical Technology (ICT)], Germany
- 11:30

Combustion development with ammonia and hydrogen fuel as a zero-emission solution
Peter Guenter, Development Engineer, Liebherr Machines Bulle SA, Switzerland

12:00 Lunch in the exhibition area

13:00 – 14:00

VALVETRAIN TECHNOLOGY

Moderation: Dr. Marco Warth, Vice President Product Development
Engine Systems and Components, MAHLE GmbH, Germany

- 13:00

Performance evaluation of NVH-optimized cylinder deactivation on a class 8 diesel truck
Robb Janak, Director, New Technology, Cummins Inc. [in cooperation with Southwest Research Institute], USA
- 13:30

Development of a variable valve actuation system for new generation heavy-duty engines
Matteo Magni, Powertrain Engineer, Innovation & Advanced Engineering, Strepavara S.p.A., Italy

14:00 Refreshment break with coffee and tea in the exhibition area

14:30 – 16:00

INTEGRATION AND APPLICATION

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

- 14:30

Safety concept development and challenges for hydrogen multi-tank systems
Dr. Clemens Bauer, Senior Manager Energy Management, ITK Engineering GmbH, Germany
- 15:00

Control strategies for safe and reliable hydrogen engine operation
Katrin Himmelseher, Research Associate, Chair of Thermodynamics of Mobile Energy Conversion Systems (TME), RWTH Aachen University, Germany [in cooperation with FEV Europe GmbH, Germany; FEV France S.A., France]
- 15:30

Control solutions for commercial hydrogen engines
Bernhard Breittegger, Lead Engineer Engine Control, AVL List GmbH, Austria
- 16:00

Closing remarks
Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group, Springer Nature, Germany



KST-Motorenversuch GmbH & Co. KG

KST. – Testing Powertrains to move the Future

KST is positioned as one of Europe's largest, independent service provider for internal combustion engine testing, EDU and inverter test work, hydrogen engine and fuel cell testing, including specialty testing such as tilt testing, rotor and stator testing, prototype validation, etc. All tests are performed according to industry standards.

Convince yourself of our competence! We will actively support you and address your specific needs!

KST's service portfolio overview:

- Electric / hybrid drives in all performance categories
- Power electronics / inverters / components
- Battery testing including reliability and abuse testing
- Hydrogen production and drives / hydrogen combustion engines / fuel cell systems / electrolyzers / stacks
- Heavy-duty engines – industry / railway / marine incl. hydrogen applications
- ICE / synthetic fuels / operating supplies

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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Cooperation partner

KST.

www.kst-motorenversuch.de/en/

Media partners

MTZ **MTZ industrial** **ATZ heavyduty**

Registration fee

€ 1,595.– 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 12-11-2024.

Date

12 – 13 November 2024

Venue

FLUGRAUM 4
Am Flugplatz 4
99820 Hörselberg-Hainich (near Eisenach)
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/heavyduty

**Participants**

The MTZ Conference “Heavy-Duty, On- and Off-Highway Engines” is aimed worldwide at experts from engine and vehicle manufacturers in the fields of commercial vehicles, off-highway and marine applications, stationary engines, suppliers and development partners, teaching staff and research assistants from universities, representatives of authorities and associations, and engineers active in these fields.

**Further information
and online registration:**

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12 – 13 November 2024, Eisenach, Germany

FACTORY TOUR

Bell Equipment
(Deutschland) GmbH
and Emitec
Technologies GmbH

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The organizer**ATZlive** // Spotlight on Powertrain and Vehicle Engineering

Our events are firm fixtures in the diaries of automotive engineers and powertrain specialists. We offer a range of innovative conferences on the latest topics in the world of automotive engineering and powertrain 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.

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