

Heavy-Duty, On- and Off-Highway Engines 2022

The current status of the energy transition in the heavy-duty sector

16 – 17 November 2022
Donaueschingen, Germany
or virtually via live stream

Hybrid event

Your choice:

Participate on site
or virtually via
live stream

HIGHLIGHT

Tour of the MAHLE GmbH plant

KST.

The current status of the energy transition in the heavy-duty sector

/ DRIVE SYSTEMS FOR FUTURE FUELS

Fuel cell drive systems,
battery-electric drive systems,
hybrid drive systems, drive systems
for alternative fuels

/ EMISSIONS LEGISLATION AND COMPLIANCE

Reducing CO₂ and pollutant emissions

/ NEW DIESEL, GAS, AND DUAL-FUEL ENGINES

New components, engines, and
development trends

KEYNOTE SPEAKERS

Dr. Marco Warth, MAHLE GmbH
Robert Szolak, Fraunhofer ISE
Peter Müller-Baum, VDMA e. V.



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

Welcome

Sustainable climate protection can only be achieved if all the stops are pulled out for energy converters and carriers. This can only be done with openness to technology. Especially in the heavy-duty sector, there is no way around alternative fuels and hydrogen.

The 17th International MTZ Conference “Heavy-Duty, On- and Off-Highway Engines” therefore offers engine developers and designers of commercial vehicles and mobile machinery, as well as marine and stationary equipment a platform to inform themselves about and exchange ideas on the latest developments in new power units and alternative energy sources.

The conference in Donaueschingen will be supplemented by a guided tour of the MAHLE GmbH plant.

I look forward to your participation in the conference.

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

Heavy-Duty, On- and Off-Highway Engines

Manufacturers of large 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, emissions 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

Detlev Baudach
Tenneco GmbH

David Bennet
Ricardo plc

Rolf Brück
Vitesco Technologies Emitec GmbH

Prof. Dr. Bert Buchholz
University of Rostock

Dr. Heiner Bülte
DEUTZ AG

Bernd Danckert
ICCL Ltd.

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 Lingens
Woodward L'Orange GmbH

Börge Nielsen
Daimler Truck AG

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

Dr. Hans-Josef Schiffgens

Martin Urban
Rolls-Royce Solutions GmbH

Dr. Ioannis Vlaskos
Winterthur Gas & Diesel Ltd.

Dr. Wolfgang Warnecke
Shell Global Solutions (Deutschland) GmbH

Dr. Marco Warth
MAHLE GmbH

Ulrich Weiss
Liebherr Machines Bulle SA

Lisa Zimmermann
Purem GmbH

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

09:00 – 10:30

KEYNOTE LECTURES

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

09:00 **KEYNOTE** **The power of water – how hydrogen will drive the energy transition to a CO₂-neutral HD industry**
Dr. Marco Warth, VP Product Development Engine Systems and Components, MAHLE GmbH, Germany

09:30 **KEYNOTE** **The role of hydrogen and its derivatives in the energy system and for future non-road machinery**
Robert Szolak, Head of Dept. Thermochemical Processes, Div. Hydrogen Technologies, Fraunhofer Institute for Solar Energy Systems (ISE), Germany [in cooperation with ICCL Ltd., Cyprus]

10:00 **KEYNOTE** **Green molecules – saving the combustion engine or saving the climate?**
Peter Müller-Baum, Managing Director Engines and Systems, Managing Director Power-to-X for Applications, CIMAC Secretary General, VDMA e. V., Germany

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

11:00 – 12:30

FUTURE FUEL ENGINES

Moderation: Dr. Michael Krüger, Senior Vice President Engineering Commercial and Off-Road Vehicles, Robert Bosch GmbH, Germany

11:00 **The TCG 7.8 H₂ – further development steps to realize a CO₂-free powertrain for NRMM**
Dr. Georg Töpfer, Coordinator of Advanced Engineering, DEUTZ AG, Germany

11:30 **The development of a 6-cylinder hydrogen engine for the off-highway market**
Dr. Bouzid Seba, Predevelopment Senior Manager, Liebherr Machines Bulle SA, Switzerland

12:00 **Investigation of an ammonia-diesel dual-fuel combustion process on a single-cylinder research engine**
Till Mante, Research Engineer, LKV, University of Rostock [in cooperation with FVTR GmbH, LOGE Deutschland GmbH], Germany

12:30 Lunch in the exhibition area

14:00 – 15:30

TESTING, COMBUSTION, AFTERTREATMENT

Moderation: Lisa Zimmermann, Chief Engineer Emission & Hydrogen, Senior Manager Advanced Engineering - Hot End & H₂-ICE, Purem GmbH

14:00 **H₂ ICE DI multicylinder engine tests for thermodynamics and component development**
Dr. Simon Schneider, Project Manager Corporate Advanced Engineering Mechatronics, MAHLE International GmbH, Germany

14:30 **Assessment of a direct-injection, spark-ignited, hydrogen-fueled heavy-duty engine**
Trevor Downes, Chief Engineer Research & Development, Ricardo Automotive & Industrial, UK

15:00 **The CCH: engine-independent thermal management for HD EU-VII/EPA-27 with low impact on existing EATS architectures**
Dr. Manuel Presti, Director Program Management Catalysts & Filters, Vitesco Technologies Emitec GmbH [in cooperation with BIN Boysen Innovationszentrum Nagold GmbH & Co. KG], Germany

15:30 Refreshment break with coffee and tea in the exhibition area

16:00 – 17:30

HYDROGEN COMPONENTS


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

16:00 **Liebherr's approach to hydrogen fuel injection systems**
Mario D'Onofrio, Head of Department System Validation and Application, Liebherr-Machines Bulle SA, Switzerland

16:30 **Hydrogen dosing systems for large engines: challenges and potentials of three different approaches**
Dr. Michael Willmann, Director Technology, Woodward L'Orange GmbH, Germany

17:00 **Hydrogen storage technologies for mobile applications: challenges and outlook**
Mathias Keck, Head of BIN, BIN Boysen Innovationszentrum Nagold GmbH & Co. KG, Germany

17:30 End of the first conference day

19:30 **Networking dinner at the “Alte Hofbibliothek”**
 Enjoy a pleasant evening and interesting conversations over dinner with colleagues and speakers.

08:30 – 10:30

FUTURE POWER SYSTEMS AND INFRASTRUCTURE

Moderation: Dr. Hans-Josef Schiffgens

- 08:30

Well-to-wheel CO₂ analysis of future heavy-duty propulsion systems in representative driving scenarios

Nicolas Hummel, Research Assistant, Institute for Internal Combustion Engines and Powertrain Systems (VKM), TU Darmstadt, Germany
- 09:00

Hydrogen in the gas network: challenges & solutions for high-performing engines for power generation

Clément Leroux, System Owner Turbocharging, INNIO Jenbacher GmbH & Co OG, Austria
- 09:30

The role of hydrogen in high power applications

Dr. Daniel Chatterjee, Director Technology Strategy & Regulatory Affairs, Rolls-Royce Solutions GmbH, Germany
- 10:00

Sustainable and safe testing of hydrogen drive systems

Stefan Schuhmacher, Senior Project Engineer, KST-Motorenversuch GmbH & Co. KG, Germany

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

11:00 – 12:30

FUEL CELLS

Moderation: Rolf Brück, Vice President Catalysts & Filters, Vitesco Technologies Emitec GmbH

- 11:00

Hybrid PEM fuel cell systems

Dr. Sönke Gößling, Group Leader Simulations and Controls, Zentrum für BrennstoffzellenTechnik GmbH, Germany
- 11:30

Fuel cell system development for heavy-duty applications

Dr. Stephan Schnorpfeil, Technology Leader, Segula Technologies GmbH, Germany
- 12:00

High-performance fuel cell stacks – suitable for heavy-duty applications?

Dr. Stefan Dwenger, Director Product Engineering, EKPO Fuel Cell Technologies GmbH, Germany
- 12:30

Closing remarks

Dr. Alexander Heintzel, Editor-in-Charge ATZ | MTZ Group

- 12:40

Factory tour: welcome and introduction

Reiner Müller, Plant Manager Plant Rottweil, Engine Systems and Components, MAHLE GmbH, Germany
- 13:00

Lunch in the exhibition area
- 14:00

Bus transfer or individual travel to the factory tour

HIGHLIGHT

14:30

Tour of the MAHLE GmbH, plant Rottweil

MAHLE – a leading international supplier and development partner to the automotive industry – and ATZlive invite you to visit the piston production facility in Rottweil.

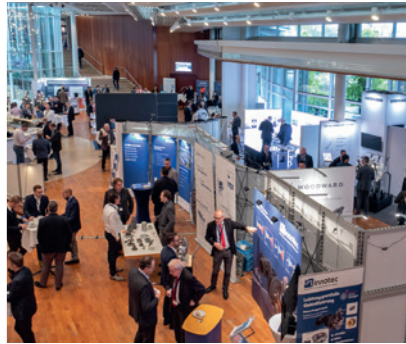
For nearly 80 years, pistons for all engine classes have been produced at the MAHLE plant – powering engines for sports cars up to large bore engines for power generation and special installations.

Visit the 100,000 m² plant and experience live how leading-edge cast and forged aluminum, as well as steel pistons of the highest quality and precision for commercial vehicles, passenger cars, and stationary engines are produced.



- 16:00

End of the factory tour and bus transfer to Rottweil train station or individual departure



KST-Motorenversuch GmbH & Co. KG

KST. – Testing Powertrains to move the Future

For more than 50 years, KST-Motorenversuch GmbH & Co. KG has been synonymous with competence and innovation.

We accompany our international customers on the path towards the mobility of the future. Our workforce of highly qualified employees masters the continuous and complex process of change in this sector of industry. We guide our customers in their validation process, through tailored R&D support and specific investments.

As a family-run, medium-sized business, we ensure that our customers benefit from fast decision making, lean operational procedures, and highly efficient services.

KST's range of services include the following areas:

- Electric / hybrid powertrains
- Power electronics / inverter
- Battery
- Hydrogen-based powertrains
- Synthetic fuels / operating fluids
- Heavy-duty engines – industry / railway / marine
- Conventional drive technologies

Cooperation partner

KST.

www.kst-motorenversuch.de

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:

Mr. Alex Woidich

Phone +49 611 7878-206

alex.woidich@springernature.com

Media partners

MTZ **ATZ** heavyduty

Registration fee

On site:
€ 1,495.– plus VAT

Virtually via live stream:
€ 995.– plus VAT

This includes the conference documentation, use of the virtual event platform, as well as coffee breaks, soft drinks, two lunch breaks and the evening reception on 16-11-2022. Virtual participation includes the conference documentation and use of the virtual event platform.

Date

16 – 17 November 2022

Venue

Donauhallen or virtually via live stream
An der Donauhalle 2
78166 Donaueschingen, Germany

Languages used in the presentations

On site: German and English with simultaneous interpreting
(German – English / English – German)

Virtually via live stream: English

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.de/en/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:



www.atzlive.de/en/heavyduty

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Your contact partner

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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 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.