

Heavy-Duty, On- and Off-Highway Engines 2023

Carbon Neutrality and Sustainability in Focus

7 – 8 November 2023
Nuremberg, Germany

HIGHLIGHT

Engine factory tour
at MAN Truck & Bus,
Site Nuremberg



KEYNOTE SPEAKERS

Thomas Nickels, MAN Truck & Bus SE
Prof. Dr. Frank Opferkuch, Nuremberg Institute of Technology
Dr. Markus Münz, VDMA e. V.

Carbon Neutrality and Sustainability in Focus

/ SUSTAINABLE POWERTRAINS

Fuel cells, battery-electric powertrains, hybrid drive systems, internal combustion engines

/ REDUCING EMISSIONS AND CO₂

Alternative fuels, exhaust aftertreatment systems, emissions legislation

/ COMPONENTS, TRENDS, AND METHODS

System development, simulation, resources, and recycling

HIGHLIGHT

Engine factory tour at MAN Truck & Bus, Site Nuremberg



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

Welcome

Internal combustion engines will continue to dominate in the future, especially in long-distance road freight transportation, as well as in agriculture, shipping, and aviation. For that reason, fuels or hydrogen produced from electricity that has been generated in a carbon-neutral process are the only possibilities for meaningful defossilization and an effective reduction in emissions. Many of the papers presented at this year's conference deal with actual implementation. Wherever possible, the development of hybrid and battery-electric drive systems is also steadily progressing.

At the MTZ Conference "Heavy-Duty, On- and Off-Highway Engines", engine developers and designers of commercial vehicles, mobile machinery, and marine and stationary equipment will find out about the latest developments. The 18th conference will be supplemented by an engine factory tour at MAN Truck & Bus, Site Nuremberg.

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 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
Emitec Technologies GmbH

Prof. Dr. Bert Buchholz
University of Rostock

Dr. Heiner Bülte
DEUTZ AG

Bernd Dankert
ICCL – Integrated Consulting
Company GmbH

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 Lingsen
Woodward L'Orange GmbH

Börge Nielsen
Daimler Truck AG

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

Dr. Hans-Josef Schiffgens

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

Ulrich Weiss
Liebherr Machines Bulle SA

08:45 Welcome and opening of the conference

Marc Ziegler, Deputy Editor-in-Chief MTZ, Springer Nature, Germany;
Prof. Dr. Peter Eilts, Director Institute of Internal Combustion Engines (ivb),
TU Braunschweig, Germany

09:00 – 10:30

ENGINES I

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

KEYNOTE**09:00 Zero emission transport: the most auspicious energy carriers for a sustainable future**

Thomas Nickels, Senior Vice President Engineering Drivetrain,
Cabin & Chassis, MAN Truck & Bus SE, Germany;
Prof. Dr. Frank Opferkuch, Professor for
Decentralized Energy Conversion and Storage,
Nuremberg Institute of Technology Georg Simon Ohm, Germany

09:30 How dual-fuel (DF) engines can help to decarbonize certain off-road applications

Dr. Bouzid Seba, Predevelopment Senior Manager,
Liebherr Machines Bulle SA, Switzerland

10:00 100% H₂ S4000 engine for PowerGen applications

Andrea Prospero, Project Manager H₂ Engine,
Rolls-Royce Solutions GmbH, Germany

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

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

www.atzlive.de/en/heavyduty



11:00 – 13:00

EXHAUST GAS AFTERTREATMENT

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

11:00 The Emitec approach to the low NO_x frontier; solutions for LCVs and HCVs

Dr. Manuel Presti, Director Program Management
Catalysts & Filters, Emitec Technologies GmbH, Germany

11:30 Thermal management solutions to support ultra-low NO_x tailpipe demands in the off-highway industry

Naveen Sridharan, Principal Engineer – Emission System
Development, Donaldson Europe BV, Belgium
[in cooperation with Donaldson SAS, France]

12:00 Exhaust aftertreatment development for future emission regulation for non-road applications

Dr. Jelto Frerichs, Simulation Engineer,
Commercial Vehicle Powertrain, IAV GmbH, Germany

12:30 Aftertreatment concepts for a commercial H₂ internal combustion engine

Onur Barış, Technical Leader, AVL Research and Engineering
Türkiye, Türkiye [in cooperation with AVL List GmbH, Austria]

13:00 Lunch in the exhibition area

14:15 – 15:45

E-DRIVES

Moderation: Martin Urban, Executive Vice President Engineering,
Rolls-Royce Solutions GmbH, Germany

14:15 The E-Deutz System – a modular, electric propulsion system for mobile and stationary machinery

Dr. Henry Kwee, Development Engineer Electrification,
DEUTZ AG, Germany

14:45 MAHLE superior continuous torque E-motor

Leonard Lorenz, Project Manager Corporate Advanced Engineering
Mechatronics, MAHLE International GmbH, Germany

15:15 Parallel-series hybrid powertrain concept for a wheel loader

Yuki Kakichi, Research Associate, Chair of Thermodynamics
of Mobile Energy Conversion Systems (tme), RWTH Aachen
University, Germany [in cooperation with FEV Europe GmbH,
Germany; Yanmar Power Technology Co., Ltd., Japan]

15:45 **Engine factory tour at MAN Truck & Bus,
Site Nuremberg**

Welcome and introduction

15:50 Refreshment break with coffee and tea in the exhibition area

16:10 Bus transfer or individual travel to the factory tour

HIGHLIGHT

16:30 **Engine factory tour at MAN Truck & Bus,
Site Nuremberg**

MAN Truck & Bus is pleased to give an insight into its development center for future drivetrain technologies to the participants of the conference and welcomes you to its Nuremberg site.

The development of battery-electric drivetrains has a high priority at MAN. In addition, MAN is continuously optimizing conventional powertrains and developing hydrogen-based drivetrain concepts.

One highlight at the Nuremberg site is the cooperation with local universities, for which a campus was specially set up on the MAN factory site. The participants will also get a glimpse into this.



19:10 Bus transfer or individual travel to the networking dinner

19:30 **Networking dinner at the “Heilig-Geist-Spital”**



Enjoy a pleasant evening and interesting conversations over dinner with colleagues and speakers.

08:30 – 10:00

LEGISLATION AND SYSTEMS

Moderation: Bernd Danckert, General Manager, ICCL – Integrated Consulting Company GmbH, Liechtenstein

KEYNOTE**08:30 Legislative tsunami from Brussels – a report**

Dr. Markus Münz, Deputy Managing Director
Engines and Systems, VDMA e. V., Germany

09:00 Dedicated system component development for H₂ engines in heavy-duty applications

Leonardo Morgado, Project Manager Predevelopment Europe,
MAHLE GmbH, Germany

09:30 Schaeffler's new i-valvetrain systems vs. electrically heated catalyts

Stefan Harges, Control System Engineer,
Schaeffler Technologies AG & Co. KG, Germany

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

10:30 – 12:00

FUELS AND LUBRICANTS

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

10:30 Decarbonization of LNG – status of LNG today and outlook

Dr. Max Kofod, Project Lead Gaseous Fuels, Shell Global Solutions
(Deutschland) GmbH, Germany [in cooperation with Shell Eastern
Trading Pte Ltd, Singapore; Shell Project & Technology, Netherlands]

11:00 Development of lubricant for H₂ ICE – challenges and opportunities

Pierre Chapelot, Product Development & Application Engineer,
TotalEnergies Lubricant, France; Bruno Griffaton, Research
Project Manager, TotalEnergies R&D Center, France

11:30 Lubricant as component for wholistic development of hydrogen internal combustion engines (ICE)

Daniel Stern, Product Management Automotive OEM,
Fuchs Lubricants Germany GmbH, Germany
[in cooperation with Liebherr Machines Bulle SA, Switzerland]

12:00 Lunch in the exhibition area

13:00 – 14:30

SUBSYSTEMS

Moderation: David Bennet, Chief Engineer Heavy Duty Propulsion,
Ricardo plc, Great Britain

13:00 Optimizing H₂ engine output and emissions through advanced ignition and passive prechamber design

Emmanuella Sotiropoulou, Vice President,
Prometheus Applied Technologies, LLC, USA;
Keith Brooks, Senior Vice President of OEM Sales, Altronic, LLC, USA

13:30 Electrically heated mixer for low temperature AdBlue dosing, mitigating deposit, and meeting future low NO_x and GHG regulations

PhD Mansour Masoudi, Director of R&D, Emissol LLC
[in cooperation with Isuzu Technical Center America], USA

14:00 Active crank case ventilation and aeration for hydrogen combustion engines

Dr. Eike Stitterich, Senior Manager Development
Crankcase Ventilation & AQE, Hengst SE, Germany

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

15:00 – 16:30

ENGINES II

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

15:00 Combustion and thermal development of a heavy-duty hydrogen IC engine

David Bell, Commercialisation Manager, Realis Simulation Ltd, UK
[in cooperation with Ricardo UK Ltd, UK; Realis Simulation s.r.o.,
Czech Republic]

15:30 Single- and multi-cylinder engine investigation: development steps for the realization of an H₂ engine for NRMM

Dr. Georg Töpfer, Coordinator of Advanced Engineering, DEUTZ AG,
Germany; Manuel Glauner, Research Assistant, Institute of
Piston Machines and Internal Combustion Engines (LKV),
University of Rostock, Germany

16:00 The new E38 MAN stationary gas engine for power and heat generation

Dr. Philipp Wöhner, Manager Development Stationary Gas Engines,
MAN Truck & Bus SE, Germany

16:30 Closing remarks

Prof. Dr. Peter Eilts, Director Institute of Internal Combustion Engines (ivb),
TU Braunschweig, Germany;
Marc Ziegler, Deputy Editor-in-Chief MTZ, Springer Nature, Germany



KST-Motorenversuch GmbH & Co. KG

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As an independent testing service provider with a strong focus on innovation and more than 55 years of experience in engine and powertrain development we position ourselves as a key player in this market. KST offers a full range of specialized testing services for OEMs and Tier1 suppliers. Our infrastructure boasts close to state-of-the-art engine test benches for passenger and commercial vehicle tests as well as for off-road vehicle test applications with a strong emphasis on development topics for e-mobility, hydrogen drives and synthetic fuels. We also bring a high level of experience and competence to the table, in the field of industrial-, rail- and marine engine testing with power capacity of up to 4 MW.

KST's service portfolio overview:

- Electric / hybrid drives in all performance categories
- Power electronics / inverter incl. HIL
- Battery testing including reliability and abuse test work
- Hydrogen-based drives, hydrogen engine and fuel cell testing
- Synthetic fuels incl. HVO
- Large engines – industry / railway / marine incl. hydrogen applications
- Future-oriented technologies for internal combustion engines

Cooperation partner

KST.

www.kst-motorenversuch.de

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Mr. Alex Woidich
Phone +49 611 7878-206
alex.woidich@springernature.com

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 07-11-2023.

Date

7 – 8 November 2023

Venue

Meistersingerhalle
Münchener Straße 19
90478 Nuremberg
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.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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7 – 8 November 2023, Nuremberg, Germany

HIGHLIGHT

Engine factory tour
at MAN Truck & Bus,
Site Nuremberg

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 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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