

Heavy-Duty, On- and Off-Highway Engines

Efficiency and Emissions

12th International MTZ Conference on Heavy-Duty Engines
28 and 29 November 2017 | Augsburg | Germany



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NEW DIESEL, GAS, AND DUAL-FUEL ENGINES

Improved performance and reduced fuel consumption

SYSTEM OPTIMIZATION

Engine and component design

REDUCING POLLUTION

The legislative framework and possible solutions

/// KEYNOTE LECTURE **Dr. Christian Poensgen**, MAN Diesel & Turbo SE

/// FACTORY TOUR **MAN Diesel & Turbo SE**

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Heavy-Duty, On- and Off-Highway Engines

WELCOME

Efficiency and emissions – the motto of this year's International MTZ Conference on "Heavy-Duty, On- and Off-Highway Engines" accurately describes the situation in which the manufacturers of heavy-duty engines for mobile, stationary, and maritime applications currently find themselves. They are required to meet increasingly high power requirements while at the same time reducing fuel consumption and emissions.

This annual conference has established itself in recent years as the prime forum for an exchange of information and experience between the developers and designers of heavy-duty engines. From the numerous papers submitted, the Scientific Advisory Board has compiled an exciting program. The focus will be on new engine concepts and components, sustainable mobility due to the use of alternative fuels, emission reduction, valve trains, and cylinder deactivation, as well as engine and system optimization. At the end of the first day, MAN Diesel & Turbo SE invites you to tour the Augsburg engine factory. An accompanying exhibition rounds off the program.

"Heavy-Duty, On- and Off-Highway Engines" is the ideal platform for you to gain detailed information on the very latest technical developments and to discuss these with other experts. Take this opportunity to expand your network and to make valuable industry contacts. I look forward to your participation in the conference.

On behalf of the Scientific Advisory Board

Wolfgang Siebenpfeiffer

Editor-in-Charge ATZ | MTZ | ATZelektronik



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.

PROGRAM

TUESDAY 28 NOVEMBER 2017

- 8:45 **Welcome and opening of the conference**
Dr. Alexander Heintzel, Editor-in-Chief
ATZ | MTZ | ATZelektronik | Iwd lightweight.design;
Dr. Kurt Jonas, Managing Director, Ricardo Deutschland GmbH
- 9:00 **Keynote lecture I Development of the MAN Diesel & Turbo engine portfolio and future challenges**
Dr. Christian Poensgen, Senior Vice President
Engineering, MAN Diesel & Turbo SE

MEDIUM-SPEED ENGINES

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

- 9:30 **Technologies for flexible and efficient engines**
Robert Ollus, Product Manager Business Line Engines, Marine Solutions, M. Kronholm, P. Aaltonen, Wärtsilä Finland Oy
- 10:00 **Agenda 2030 – mega trends in the large bore marine engine business**
Dr. Udo Schlemmer-Kelling, Executive Engineer, FEV Europe GmbH
- 10:30 Refreshment break with coffee and tea in the exhibition area

HEAVY-DUTY ENGINES

Moderator: Dr. Michael Krüger, Senior Vice President Diesel Systems, System Engineering, Robert Bosch GmbH

- 11:00 **Offroad engine based on a present-day 15.3l truck engine**
Falko Arnold, Lead Engineer Design Industrial Applications, T. Stamm, MAN Truck & Bus AG
- 11:30 **A high-efficiency lean-burn mono-fuel heavy-duty natural gas engine for achieving Euro VI emissions legislation and beyond**
Andrew Auld, Project Engineer, Dr. M. Keenan, R. Pickett, Ricardo UK Ltd
- 12:00 **Smart evolution into clean mobility – the internal combustion engine becomes “green”**
Thomas Korn, CEO (Founder), Keyou GmbH
- 12:30 Lunch in the exhibition area

GAS ENGINE DEVELOPMENT

Moderator: Prof. Dr. Georg Wachtmeister, Head of the Institute of Combustion Engines (LVK), TU Munich

- 14:00 **Identification of dual-fuel knock**
Garrett Anderson, Research Engineer,
Southwest Research Institute, USA
- 14:30 **LDM Compact – an efficient methodology for the development of combustion concepts for non-natural gas**
Dr. Jan Zelenka, Area Manager, Dr. M. Kirsten, Dr. E. Schneßl, G. Kammel, Prof. Dr. A. Wimmer, LEC GmbH – Large Engines Competence Center, Austria
- 15:00 **Pilot injection strategies for medium-speed dual-fuel engines**
Björn Henke, Project Engineer LEDF2 (Engine Testing), K. Schleef, Prof. Dr. B. Buchholz, Institute of Piston Machines and Internal Combustion Engines (LKV), University of Rostock; Sascha Andree, Project Engineer LEDF2 (3D-CFD), Dr. J. Nocke, Prof. Dr. Dr. E. Hassel, Chair of Technical Thermodynamics (LTT), University of Rostock; M. Theile, FVTR GmbH; R. Graumüller, M. Hoff, Caterpillar Motoren GmbH & Co. KG
- 15:30 Refreshment break with coffee and tea in the exhibition area
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- 16:15 Bus transfer followed by a **guided tour of the engine factory of MAN Diesel & Turbo SE** at its headquarters in Augsburg, including a tour of the assembly line, mechanical production, the PrimeServ training academy and turbocharger production. The MAN factory in Augsburg is considered to be the “birthplace of the diesel engine”.



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

PROGRAM

WEDNESDAY 29 NOVEMBER 2017

HIGH-SPEED ENGINES

Moderator: Dr. Ioannis Vlaskos, Director – Engines Business Unit,
Global Market Sector Director – Marine, Ricardo Deutschland GmbH

8:30 **New MTU series 4000 rail engine fulfilling most ambitious emission regulation**

Dr. Carsten Baumgarten, Director Series 4000 Rail, C&I,
Genset, T. Weiß, Dr. G. Zitzler, C. Herkommer, Dr. B. Maletic,
MTU Friedrichshafen GmbH

9:00 **The new MAN 175D high-speed engine – synthesis of commercial and medium-speed engine development**

Christian Braun, Project Engineer Base Engine, Dr. A. Rieß,
P. Böhm, H. Lund, Dr. K. Eder, MAN Diesel & Turbo SE

9:30 **Non-visible smoke technology for extremely high-speed 4MW Class 20FX diesel engine during ship transient operation**

Katsuyuki Toda, Manager of High Speed Diesel Engine Design,
Dr. S. Goto, S. Ogura, D. Kawai, Niigata Power Systems Co.,Ltd;
Japan

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

COMPONENTS

Moderator: Dr. Michael Willmann, Senior Manager Advanced
Development and Measurement Engineering, L'Orange GmbH

10:30 **Urea filter module for SCR systems as a solution for nonroad applications**

Christian Kocksch, Manager Fuel and Oil Filtration,
M. Postel, MANN+HUMMEL GmbH

11:00 **Latest developments in the field of high-strength injection and motor components**

Jochen Heizmann, Development Engineer Advanced
Engineering, Dr. H.-W. Raedt, Hirschvogel Automotive Group

11:30 **Contribution to a reliable cylinder head lay out for durability – numerical prediction of residual stress in cylinder head castings**

Tobias Winter, Manager Simulation Department,
Motorenfabrik Hatz GmbH & Co. KG; Dr. G. Hartmann,
A. Heitmann, MAGMA GmbH

12:00 Lunch in the exhibition area

VALVE TRAIN AND CYLINDER DEACTIVATION

Moderator: Manfred Pister, Head of Base Engine Development, DEUTZ AG

13:00 **Methodology for the development of variable valve drive systems from concept to series approval with focus on heavy-duty engines**

Andreas Eichenberg, Lead Engineer Engine Testing, Porsche Engineering Services GmbH

13:30 **Variable valve actuation in commercial engines using a lift switching rocker arm**

Justus Himstedt, Head of Camshaft/Cam Follower, P. Altherr, T. Ihne, MAHLE GmbH; Dr. S. Schneider, MAHLE International GmbH

14:00 **Investigation of the cylinder cut-out in medium-speed dual-fuel large engines**

Johannes Konrad, Project Assistant, Prof. Dr. T. Lauer, Institute for Powertrains and Automotive Technology (IFA), Vienna University of Technology, Austria; Dr. M. Moser, E. Lockner, Dr. J. Zhu, MAN Diesel & Turbo SE

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

SYSTEM OPTIMIZATION

Moderator: Dr. Hans-Otto Herrmann, Director Performance & Emissions, Chief Engineer GATS, Daimler AG

15:00 **Upgrading stage IIIb engines to achieve stage IV**

Dominik Lamotte, Head of Department Systems and Integration, K. Schrewe, I. Zirkwa, HJS Emission Technology

15:30 **Oil system optimization of HD diesel engines**

Dr. Simon Schneider, Project Manager Corporate Advanced Engineering, MAHLE International GmbH; H. Conrad, MAHLE Filtersysteme GmbH; G. Marinov, MAHLE Powertrain GmbH

16:00 **Rankine cycle: from thermodynamic equation to road test**

Thibault Fouquet, System Architect Group Leader, Faurecia Clean Mobility, France

16:30 **Closing remarks**

Wolfgang Siebenpfeiffer, Editor-in-Charge ATZ | MTZ | ATZelektronik



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Ricardo delivers concept development, simulation, design work, combustion process development, application and testing. Our test facilities include more than 30 modern industrial engine test beds for heavy-duty and large engines enabling us to develop the next generation of low-emission and fuel-efficient engines for commercial vehicles for on- and off-highway, marine, rail, clean energy and power generation applications and meet the standards for future emission legislation.



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REGISTRATION FEE

€ 1,395.– plus VAT

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

VENUE

Messe Augsburg ASMV GmbH
Conference Center
Am Messezentrum 5
86159 Augsburg | Germany

HOTELS

The following hotels have room blocks at reduced prices for the participants. **Please reserve your room by 23 October 2017 at the latest by using the following link:**
www.avantel.de/HeavyDutyOnundOffHighwayMotorenAugsburg2017

Hotel Augusta

Ludwigstr. 2 / Kesselmarkt
86152 Augsburg | Germany
Phone +49 821 50140
reception@hotelaugusta.de
www.hotelaugusta.de
€ 109.– Single room, includes breakfast

Holiday Inn Express Augsburg

Nagahama-Allee 77
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info@express-augsburg.de
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A bus shuttle service is provided between the two hotels and the conference venue.

LANGUAGES USED IN THE PRESENTATIONS

German and English with simultaneous interpreting
(German – English / English – German)

CONDITIONS

No cancellation charge is due if registration is canceled by 30 October 2017. Cancellations made after that date will incur a charge of 35 % of the registration fee. For cancellations made after 6 November 2017 the full registration fee is payable. Cancellations must be made in writing. The date of the postmark will determine whether the deadline has been met. If you are unable to attend, we will be happy to accept a substitute participant.

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// Spotlight on Powertrain and Vehicle Engineering //

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CONFERENCE REGISTRATION

Heavy-Duty, On- and Off-Highway Engines

28 and 29 November 2017 | Augsburg | Germany

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