Engine ress

Meeting Place for the Engine Community



23 and 24 February 2021 | Baden-Baden | Germany

with accompanying trade exhibition

Main topics

- Sustainable mobility: complete LCA
- Internal combustion engines and fuels as a complete system: CO₂ reduction, emissions control, electrification
- Climate-friendly internal combustion engines
- Increasing efficiency in products and processes
- Use of hydrogen and synthetic fuels

Panel discussion

CO₂ budget – the role of engines and fuels in sustainable mobility

Top speakers



Dr. Franz Bäumel, AUDI AG | Prof. Dr. Christian Beidl, TU Darmstadt | Tobias Block, German Association of the Automotive Industry (VDA), Belgium | Dr. Simon Edwards, Ricardo GmbH | Prof. Dr. Helmut Eichlseder, TU Graz, Austria | Prof. Dr. Thomas Koch, Karlsruhe Institute of Technology (KIT) | Dr. Martin Stahl, Stahl Automotive Consulting GmbH & Co. KG | Daniel Weißbach, Institute for Solid-State Nuclear Physics | Dr. Zhixin Wu, China Automotive Technology & Research Center





www.ATZlive.com

take part virtually via our live stream

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A WARM WELCOME TO ALL PARTICIPANTS

Covid-19 has changed our world and our lives at a rate that we never thought possible. Our sensitivity towards our fellow human beings, the natural world, and our environment has increased. Our society must focus more than ever before on meeting the Paris climate protection targets.

National and international markets require an approach that is open to all technologies in order to fulfill mobility and transport needs. Electrified powertrains and efficient passenger car and commercial vehicle engines together with new fuels as part of an integrated system are key technologies for CO₂-neutral individual mobility with low emissions.

For that reason, in 2021 the International Engine Congress, with its globally unique event format, will continue its systematic examination of the complete system of internal combustion engines and innovative fuels that has been a trademark for six years now.

Stay abreast of current trends and benefit from a lead in knowledge!

- You can expect international speakers as well as top-level presentations and panel discussions
- The congress is a great opportunity to "network" the evening event for the engine community offers stimulating discussions in an informal atmosphere
- The trade exhibition, held in parallel, provides ample information about innovative products and services in the field of combustion engine development

We look forward to your participation.

On behalf of the program advisory boards

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Dr. Johannes Liebl Scientific Director of the Congress, Editor-in-Charge ATZ | MTZ | ATZelektronik

THE INTERNATIONAL ENGINE **CONGRESS AS A HYBRID EVENT**

You have the choice:

attend the congress in person or take part via our live stream

The streaming package includes all keynote, impulse, and plenary presentations as well as the panel discussion and all presentations of the parallel sessions "passenger car engine technology", "commercial vehicle engine technology" and "innovative fuels".

The event app with the live stream offers you Q&A functions, 1:1 video chats with participants, exhibitors, and speakers, as well as live opinion surveys, your personal program overview, a virtual exhibition, and other useful functions.

You can find detailed information on our website.



ENGINE COMMUNITY EVENING

As every year, ATZlive and VDI Wissensforum invite you to round off the first day of the International Engine Congress with a get-together. You can look forward to interesting conversations with colleagues over dinner and have the opportunity to expand your network.

Tuesday, 23 February 2021, 19:00 h





Wissensforum www.vdi-wissensforum.de

MEDIA PARTNER

PARTICIPANTS

The event is primarily aimed at engineers and technicians in the industry or those involved in research and teaching, who are engaged in the optimization of the traditional developmental areas of the combustion engine or the advancement of procedures and systems to produce conventional or renewable fuels and lubricants. The lectures will be equally attractive for chemists and biologists who work in this industry. The focus will be on both diesel and spark-ignition engines (gasoline/gas) for passenger and commercial vehicles and offhighway applications.

SIMULTANEOUS INTERPRETING

GERMAN → ENGLISH

PROGRAM ADVISORY BOARDS

PASSENGER CAR ENGINE TECHNOLOGY



Dr. Norbert Alt Executive Vice President, FEV Europe GmbH



Dr. Michael Elicker Manager Heavy Duty System Engineering, Schaeffler Technologies AG & Co. KG



Achim Königstein European Leader Gasoline Engines,





Dr. Michael Winkler Head of Powertrain, Hyundai Motor Europe Technical Center GmbH

COMMERCIAL VEHICLE ENGINE TECHNOLOGY



Vice President Internal Combustion Engines & Exhaust Aftertreatment MAN Truck & Bus SE

Dr. Andreas Broda





Philip Scarth General Manager, FPT Motorenforschung AG (CH)

Dr. David Bothe

Associate Director,

Frontier Economics



Wolfgang Maus Managing Director,





Head of Advanced



Innovation, APL Automobil-Prüftechnik Landau GmbH



Dr. Werner Willems Technical Specialist

Powertrain Combustion Systems, Ford Forschungszentrum Aachen GmbH



Dr. Franz Bäumel Technical Director Development Inline Gasoline Engines, Transmission AUDI AG



Dr. Martin Berger Vice President Corporate Research and Advanced Engineering, MAHLE International GmbH



Prof. Dr. **Uwe Dieter Grebe** Managing Director, AVL List GmbH (A)



Prof. Dr. Peter Gutzmer Chairman of the Board, Research Association for **Combustion Engines** (FVV e. V.)



Dr. Hermann Middendorf Head of Basic Development Powertrain. Volkswagen AG



Dr. Erik Schünemann Director System Engineering Powertrain Subsystems. Robert Bosch GmbH



Jürgen Lehmann Head of R&D Engine & Aftertreatment Systems, Daimler Truck AG



Bernd Lindemann Vice President Diesel Powertrains, FEV Europe GmbH



Dr. Markus Schwaderlapp Senior Vice President Research & Development DEUTZ AG



Karl Dums Director Advanced Engineering Powertrain & Powertrain Strategy, Dr. Ing. h.c. F. Porsche AG



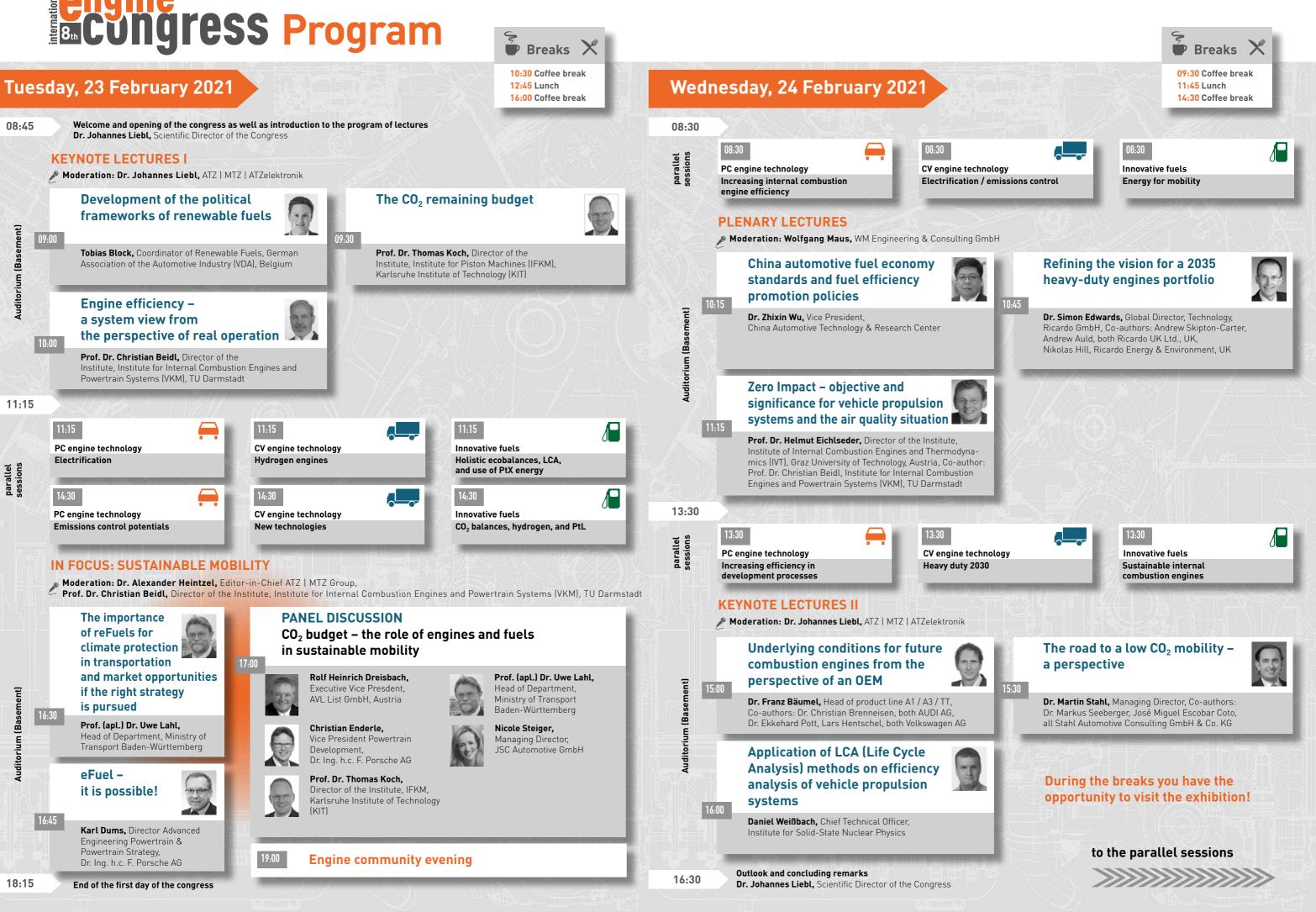
Prof. Dr. Georg Wachtmeister Ordinary, Chair of Internal Combustion Engines. TU Munich



Dietmar Goericke Managing Director, Research Association for Combustion Engines (FVV e. V.)

Dr. Wolfgang Warnecke Chief Scientist Mobility, Shell **Global Solutions** (Deutschland) GmbH

engine Encongress Program





Presentations parallel sessions

Tuesday, 23 February 2021



PC engine technology

Kongress-Saal I (1st Floor)

| | ELECTRIFICATION Moderation: Dr. Norbert Alt, FEV Europe GmbH |
|-------|--|
| 11:15 | Customer first! – the key to achieving customers' acceptance for connected |
| | powertrains Sebastian Barth, Senior Project Engineer, Co-authors: Michael Fischer, both Honda R&D Europe (Deutschland) GmbH, Pascal Schlatter, Institute for Internal Combustion Engines and Powertrain Systems (VKM), TU Darmstadt |
| 11:45 | The combustion engine in hybrid powertrains – highly efficient and cost optimized derived from modular platforms |
| | Dr. Wolfgang Schöffmann, Head of Technology Base Powertrain, Co-authors: Gerald Teuschl, Dr. Raimund Ellinger, Michael Howlett, Dr. Paul Kapus, Christoph Sams, Karl Weihrauch, all AVL List GmbH, Austria |
| 12:15 | Life cycle assessment of an internal combustion engine vehicle using renewable |
| | electricity for fuel and vehicle production Dr. André Sternberg, Scientist, Co-authors: Christoph Hank, Dr. Achim Schaadt, all Fraunhofer Institute for Solar Energy Systems (ISE) |
| | EMISSIONS CONTROL POTENTIALS Moderation: Prof. Dr. Uwe Dieter Grebe, AVL List GmbH (A) |
| 14:30 | Potential of variable valve train systems to overcome the NO _x /CO ₂ trade-off in emission legislation – a comparison for diesel PC and CV applications Dr. Michael Elicker, Manager System Engineering Heavy Duty, Co-authors: Andreas Möller, both Schaeffler Technologies AG & Co. KG, Dr. Maximilian Brauer, René Pohlke, both IAV GmbH |
| 15:00 | Holistic hybrid RDE calibration methodology for EU7 |
| | Dr. Michael Görgen, Department Manager Emission Calibration, Co-authors: Dr. Martin Nijs, both FEV Europe GmbH, Frank Dorscheidt, Johannes Claßen, both Institute for Combustion Engines (VKA), RWTH Aachen University |
| 15:30 | Application of a systematic development methodology for post-EU6 engine calibration under RDE boundary conditions Henning Nies, Research Assistant, Co-authors: Prof. Dr. Christian Beidl, both Institute for Internal Combustion Engines and Powertrain Systems (VKM), TU Darmstadt, Holger Hüners, Deniz Serifsoy, both ISUZU MOTORS Germany GmbH |

CV engine technology

Forum (EG)

| ^ ~ | HYDROGEN ENGINES Moderation: Dr. Andreas Broda, MAN Truck & Bus SE |
|------------|---|
| 11:15 | With lean-burn concept and turbocharging to an efficient hydrogen engine Thomas Korn, CEO & Co-Founder, KEYOU GmbH |
| 11:45 | Potentials and challenges of hydrogen combustion system development as a sustainable fuel for commercial vehicles Dr. Reza Rezaei, Manager, Co-authors: Marc Sens, Michael Riess, Dr. Christoph Bertram, all IAV GmbH |
| 12:15 | Combustion system development for hydrogen fuelled heavy duty internal combustion engines Dr. Lukas Virnich, Senior Project Manager, Co-authors: Bernd Lindemann, Dr. Martin Müther, Dr. José Geiger, all FEV Europe GmbH, Andreas Kremer, Robert Bosch GmbH |
| , | NEW TECHNOLOGIES Moderation: Jürgen Lehmann, Daimler Truck AG |
| 14:30 | Jet ignition as an enabling technology for stable, highly dilute hydrogen combustion in off-road and heavy-duty engines Michael Bunce, Head of Research, Co-authors: Dr. Nathan Peters, both MAHLE Powertrain LLC, USA, Dr. Bouzid Seba, Bakir Puran, both Liebherr Machines Bulle SA, Switzerland |
| 15:00 | Cylinder deactivation as effective means for exhaust thermal management and CO ₂ reduction – test results on a US 13L HDDE Robb Janak, Director New Technology, Jacobs Vehicle Systems, Inc., USA |
| 15:30 | A new class of Al-based engine models Dr. Dominik Rether, Project Lead UserCylinder, Co-authors: Dr. Michael Grill, both Research Institute of Automotive Engineering and Vehicle Engines Stuttgart (FKFS), Prof. Dr. Michael Bargende, Institute of Automotive Engineering (IFS), University of Stuttgart |
| | |

Innovative fuels

Auditorium (Basement)

| | HOLISTIC ECOBALANCES, LCA, AND USE OF PTX ENERGY Moderation: Wolfgang Maus, WM Engineering & Consulting GmbH |
|-------|--|
| 11:15 | Precise stock-taking – ensuring an efficient usage of the remaining CO ₂ budget in mobility Dr. David Bothe, Associate Director, Frontier Economics Ltd. |
| 11:45 | LCA – a further requirement for engineers Dr. Olaf Toedter, Director New Technologies & Ignition Systems, Co-authors: Philipp Weber, Prof. Dr. Thomas Koch, all Institute for Piston Machines (IFKM), Karlsruhe Institute of Technology (KIT) |
| 12:15 | Energy carriers for transport cost-effectively produced overseas and transported to Germany Dr. Otto Machhammer, Consultant, M+ machhammer consulting |
| | CO ₂ BALANCES, HYDROGEN, AND PTL Moderation: Dr. David Bothe, Frontier Economics Ltd. |
| 14:30 | Climate protection in the transport sector Prof. Dr. Dr. Ulrich Schmidt, Head of Research Center, Institute for the World Economy (IfW Kiel) |
| 15:00 | "Green" hydrogen for ground-based heavy duty long-distance transportation – a techno- economic analysis of various provision chains Prof. Dr. Martin Kaltschmitt, Head of Institute, Co-authors: Lucas Sens, Dr. Ulf Neuling, all Institute of Environmental Technology and Energy Economics (IUE), Hamburg University of Technology |
| 15:30 | The hydrogen engine for commercial vehicles: bridging technology or long-term solution? Anton Arnberger, Technical Expert Commercial Gas Engine, Co-authors: Bernhard Raser, both AVL List GmbH, Austria, Prof. Dr. Helmut Eichlseder, Dr. Peter Grabner, both Institute of Internal Combustion Engines and Thermodynamics (IVT), |



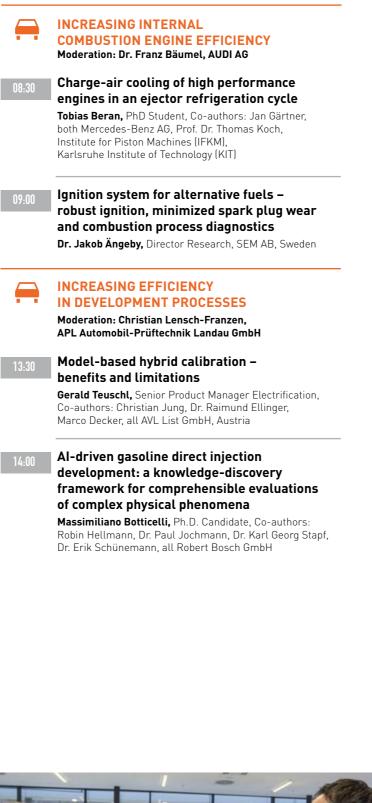
Presentations parallel sessions

Wednesday, 24 February 2021



PC engine technology

Kongress-Saal I (1st Floor)

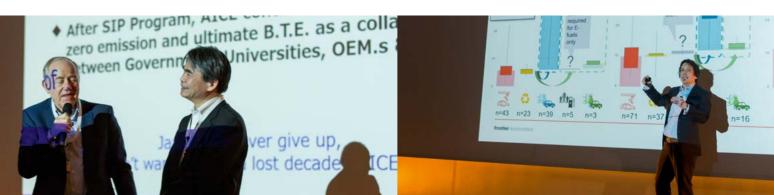


CV engine technology

Forum (Ground Floor)







Innovative fuels

Auditorium (Basement)

| | ENERGY FOR MOBILITY Moderation: Wolfgang Maus, WM Engineering & Consulting GmbH |
|-------|---|
| 08:30 | Energy carriers for future mobility Dr. Martin Härtl, Chief Engineer, Co-authors: Sebastian Blochum, Christoph Kraus, Prof. Dr. Georg Wachtmeister, all Chair of Internal Combustion Engines (LVK), TU Munich |
| 09:00 | E-fuels – gamechanger of mobility Elmar Kühn, CEO, UNITI – German Association of Small- and Medium-Sized Mineral Oil Companies |
| | SUSTAINABLE INTERNAL COMBUSTION ENGINES Moderation: Dr. Werner Willems, Ford Forschungszentrum Aachen GmbH |
| 13:30 | New initiatives for industry-academia collaboration for ICE research in Japan – Zero Emission Mobility Power Source Consortium (ZEM Conso) |
| | Dr. Mitsuharu Oguma, Principal Research Manager, National Institute of Advanced Industrial Science and Technology (AIST), Co-author: Prof. Takuji Ishiyama, Graduate School of Energy Science, Energy Conversion Science Department, Kyoto University, Japan |
| 14:00 | Operation of OME in a single cylinder research engine and a series engine – an analysis of efficiency and ultra-low emissions by an OME-specific application Philipp Demel, Research Assistant, |
| | Co-authors: Alexander Mokros, Friedemar Knost |

Co-authors: Alexander Mokros, Friedemar Knost, Prof. Dr. Christian Beidl, all Institute for Internal Combustion Engines and Powertrain Systems (VKM), TU Darmstadt



EXHIBITION AND SPONSORSHIP

GOLD SPONSOR 2021

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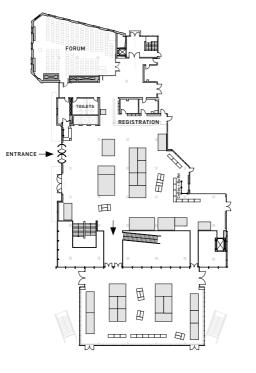
SILVER SPONSOR 2021



ACCOMPANYING EXHIBITION

The exhibition provides the ideal presentation platform for companies that supply components for internal combustion engines or that develop and optimize engines and engine parts. These include suppliers of components, systems, and modules for diesel and gasoline engines, companies that produce measuring and testing equipment, and development service providers.

If you would like to make contact with prominent congress participants and present your products and services effectively to a selected specialist audience, then you should become involved in the congress as an exhibitor or sponsor. This industry meeting place gives you the ideal opportunity to take part in technical discussions with the participants and to make new contacts within the industry. In addition to each exhibition package, every exhibitor will be given a virtual stand in our app. This will enable you not only to upload documents and to chat, but also to hold 1:1 video calls with all participants. We will also be happy to design individual sponsoring and exhibition packages for you in accordance with your specific wishes and requirements. Take your pick from a variety of options.



YOUR CONTACT PARTNERS

ATZlive Elke van Lon Head of Events: Sponsoring + Exhibition Phone +49 611 7878-320 elke.vanlon@springernature.com VDI Wissensforum Vanessa Ulbrich Project Consultant Exhibition & Sponsorship Phone +49 211 6214-918 ulbrich@vdi.de





We are happy to inform you about the various presentation opportunities available: www.motorenkongress.de/en

REGISTRATION FEE

Participation on site

Keynote, impulse, and plenary presentations, panel discussion as well as passenger car engine technology, commercial vehicle engine technology or innovative fuels € 1,495.- plus VAT € 1,395.- plus VAT for VDI members

Participation via live stream

Keynote, impulse, and plenary presentations, panel discussion as well as passenger car engine technology, commercial vehicle engine technology and innovative fuels € 795.– plus VAT € 695.– plus VAT for VDI members

Both participant packages include all submitted conference documents and the use of the event app. If you are attending the conference in person, the conference fee also includes catering during the coffee and lunch breaks and the evening event.

Mode of payment

By bank transfer after receipt of an invoice or by credit card (MasterCard, Visa). Participants with a billing address outside Germany, Austria and Switzerland are requested to pay by credit card.

DATE

23 and 24 February 2021

LANGUAGES USED IN THE PRESENTATIONS

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

INFORMATION ON CORONAVIRUS SAFETY



The health and safety of our customers and employees is our top priority. We have therefore developed a safety concept to ensure protection against the risk of coronavirus. We will closely observe official national and regional regulations and will, of course, comply with current coronavirus protection measures. This may in some circumstances result in

some restrictions for participants. For example, it may not be possible to freely move between parallel sessions or the maximum capacity of the conference rooms may be limited.

YOUR CONTACT PARTNER

Participants – service and registration Denis Gebauer Event Manager ATZlive Phone +49 611 7878-206 denis.gebauer@springernature.com Online Registration and Further Information:

www.enginecongress.com



VENUE

Kongresshaus Baden-Baden Augustaplatz 10 76530 Baden-Baden | Germany Phone +49 7221 304-0 www.kongresshaus.de

HOTELS

Various hotels in Baden-Baden – all centrally located – have room blocks at reduced rates for participants.

The complete list of hotels can be found on the event website: www.ATZlive.com. Conference participants may book rooms either online or directly at Baden-Baden Kur & Tourismus GmbH.

Your contact person at Baden-Baden Kur & Tourismus GmbH is: Conventions & Events Team Phone +49 7221 275-271 sales@baden-baden.com

Please make your reservation by 22 January 2021 at the latest.

If you are prevented from attending the conference in person for health reasons or due to travel restrictions, you have the opportunity this year to participate in the conference virtually via our live stream. The event app offers you Q&A functions, 1:1 video chats with participants, exhibitors, and speakers, live opinion surveys, your personal program overview, a virtual exhibition, and other useful functions.









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Meeting Place for the Engine Community



Further Information and Online Registration:



www.enginecongress.com

8th International Engine Congress 2021 23 and 24 February 2021 | Baden-Baden | Germany or virtually via live stream

THE ORGANIZERS

ATZlive

// Spotlight on Powertrain and Vehicle Engineering //

ATZlive organizes its high-caliber conferences for vehicle and engine specialists together with key representatives from research and industry to ensure that they are tailor-made to the needs of the participants and address the very latest issues. 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 of the ATZ and MTZ Group, is part of Springer Nature, one of the world's leading publishing groups for scientific, educational, and specialist literature.



www.ATZlive.com

VDI WISSENSFORUM

// We develop engineers //

Our passion: sharing knowledge and skills covering almost all technological disciplines. Your added value: a diverse and comprehensive range of further education options. We draw on the extensive expertise of the VDI (Association of German Engineers) and a comprehensive network of experts. At our events, we put the emphasis on practical relevance. Other qualifications, such as management and leadership knowledge, social skills, business administration and law, round off our range of further education programs. Dedicated staff with extensive experience and expertise ensure that the events are staged successfully. About 20 members of our staff are themselves engineers and can provide a high level of technological knowledge.



www.vdi-wissensforum.de/en