

The leading international congress for electrified powertrains, systems, components and methods

### Main topics:

Vehicle propulsion systems from 48V MHEV to 800V BEV  
Architecture, Design, Operational Strategy

Highly efficient Electric Drive Systems and Components  
E-Motor, Power Electronics, Energy Storage and Management

Digitalization, AI, Intelligent Control

System Integration and NHV  
Thermal Management, Acoustics, EMC

Sustainability and CO<sub>2</sub> Neutrality

Transmission Systems, Fluids and Components

### Dritev interactive

Poster exhibition | Speakers corner | Dritev Summer Night | Car presentation | Workshops

Meet international experts from:



### Workshops (in German)

- KI verstehen und anwenden – Grundlagen für Kosteneinsparung und Prozesseffizienz
- Akustik und Schwingungen – Grundlagen und Messtechnik in Anwendung

### Accompanying event

- 9th International VDI Conference
- Powertrain Systems in Mobile Machines



# Program overview

## Workshops





Monday, June 29, 2026, Kongresshaus Baden-Baden, Germany

Only held in German!

09:00 - 17:00	KI verstehen und anwenden – Grundlagen für Kosteneinsparung und Prozesseffizienz (01ST807026)	Akustik und Schwingungen – Grundlagen und Messtechnik in Anwendung (01ST808026)
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## 1st Congress day

Tuesday, June 30, 2026

09:00	Welcome address			
09:10	Plenary speeches (Auditorium) 			
10:50	Coffee break and visit of the exhibition 			
11:30	<b>Auditorium</b>	<b>Room 2</b>	<b>Room 3</b>	<b>Room 1</b>
	Electric Drive Units	Range Extender	EV Topologies	Accompanying conference Powertrain Systems in Mobile Machines 2026 Process Drives
13:00	Lunch and visit of the exhibition 			
14:30	AI in the Product Development Process	Materials and Sustainability in E-Motors	Trends in Power Electronics for Drivetrains	Traction Drive
16:00	Coffee break and visit of the exhibition 			
16:45	Optimized E-Drives	Customer, Regulations, Environment	Bearing Currents	Electric Systems Architecture
18:15	End of the 1st congress day			
18:45	Dritev Summer Night			

## 2nd Congress day

Wednesday, July 1, 2026

08:30	<b>Auditorium</b>	<b>Room 2</b>	<b>Room 3</b>	<b>Room 1</b>
	Immersion Cooling	E-Drive Topologies	Architecture	Accompanying conference Powertrain Systems in Mobile Machines 2026 Real World Experience of Electrification
10:30	Coffee break and visit of the exhibition 			
11:15	Integrating AI into Products	Lubrication	Manufacturing Technology	Powertrain Comparison
12:45	Lunch and visit of the exhibition 			
14:15	Plenary speeches with subsequence discussion (Auditorium) 			Systemic Developments
16:00	Awarding of the Best Presentation Award for Young Engineers (Auditorium)			
16:05	Closing remarks			
16:15	End of the congress			

# Program

1st Congress day  
Tuesday, June 30, 2026

08:00 Registration

## Auditorium – Plenary

09:00 Opening and welcome address

Dipl.-Ing. Thomas Pfund, Schaeffler Automotive, Bühl, Germany



### Plenary speeches

Dipl.-Ing. Thomas Pfund, Schaeffler Automotive

09:10 Europe, China and the AI Revolution: What does this Mean for Powertrain Technology?

- As USA and China lead in AI technology, do we still have a chance on the application side?
- Will the leadership in AI contribute to the success of Chinese automotive industries?
- What are the opportunities and challenges posed by AI for the automotive sector and drive train technology?

Prof. Dr. Hans Uszkoreit, Scientific Director, German Research Center for Artificial Intelligence, Berlin, Germany



09:35 Faster, higher, stronger: The rise of Chinese competition and what it means for Europe's automotive industry

- The unique reasons, from politics to technology, that make Chinese competition so challenging
- Future trajectory of Chinese competitors – in China and around the globe
- Chinese competition as a wake-up call for European automotive companies

Björn Conrad, CEO and co-founder of China-focused consultancy Sinolytics, Berlin, Germany and Beijing, China



10:00 Global economy: Geopolitics meets technological disruptions

- Global growth has been below its long-term for the last 7 years
- In many markets, the advance of Chinese competitors and disruptive technological changes have challenged existing business models
- The apparent changes in the geopolitical landscape add to adjustment costs of industries

Dr. Thomas Hueck, Chief Economist, Robert Bosch GmbH, Stuttgart, Germany



10:25 Powering progress – Electrification as a catalyst for sustainable mobile machinery

- Electrification is more than a trend – It's a transformation that is revolutionizing mobile machinery across the agricultural, construction, and marine sectors
- Sustainability and performance can go hand in hand: Regulatory pressure, market demand, and advances in battery and charging technologies drive greener, efficient machines
- Collaboration fuels innovation: Automation, fast charging, battery swapping, smart grids, and AI-driven vehicle-to-grid solutions enable reliable and performant fleet operation
- The future is now – Let's lead it with deeply modernized, resilient grids for a renewable-powered world

Dr.-Ing. Udo Scheff, President, KREISEL Electric GmbH, Rainbach i.M., Austria



10:50 Meet & Greet - Coffee break in the exhibition area and car presentation

11:30 Change to the parallel sessions

Interactive



Focused and dedicated



Functional and cross-industry



Sophisticated technology



Extremely valuable

Your international technology congress for powertrain developers in Baden-Baden, Germany!

## Auditorium



### Electric Drive Units

**Dr.-Ing. Carsten Gitt,**  
Mercedes-Benz AG

#### 11:30 Advanced electric drive architecture of the Mercedes-Benz EQS

- All-electric drive architecture of the Mercedes-Benz EQS
- Technical design of the drive components
- Integrated interaction of the drive technologies
- Operating strategy and operating characteristics

**Michael Weiss,** Tech. Sen. Manager E-Drive Large Cars & Testing, Development Drive-system e-Drive, Co-authors: Gregor Paul, Daniel Hopp, all Mercedes-Benz AG, Sindelfingen, Germany

#### 12:00 Bosch eAxle Platform: Building blocks to provide worldwide eAxle solutions

- eAxle platform
- Building blocks
- Worldwide application
- Primary and secondary drives

**Dr. Quentin Werner,** Expert Team Leader eAxle Performance, Co-authors: Dr. Peter Dengler, Artur Angersbach, all Robert Bosch GmbH, Schwieberdingen, Germany

#### 12:30 Compact, cost-efficient, modular and sustainable: Transferring latest technology into next generation EDU for compact and medium size electric vehicles

- Transfer of high-speed concepts into high volume segments
- Packaging and weight optimization
- Fulfillment of modularity requirements
- Scalability and producibility in higher volume

**Dipl.-Ing. (FH) Patrick Schatz,** EMBA, Global Technical Director Electrification, Co-authors: Dipl.-Ing. (FH) Wilhelm Vallant, both AVL List GmbH, Graz, Austria, Dipl.-Ing. (FH) Mathias Deiml, AVL Software and Functions GmbH, Regensburg, Germany

13:00 **Time for Business Lunch** – Meet & Greet in the exhibition area with car presentation

## Room 2



### Range Extender

**Dipl.-Ing. (FH) Udo Sommerhalter,**  
Valéo Group

#### New generation of powertrain platform for range extender electric vehicles

- Industry-leading efficiency of direct-connected REV generator
- Deeply integrated 2-in-1 drive generator module
- Ultra-low auxiliary drive drag loss design
- Excellent NVH performance

**Jiayu Chen,** Director of PowerTrain at Li Auto Germany R&D Center GmbH in Munich, Germany, Co-authors: Lifu Zheng, Ding Jia all Li Auto Inc, Shanghai, China

#### Potential analysis of range extended two-drive-powertrains

- Two downsized electric motors for lower iron losses and higher efficiencies at partial loads
- Economic long-range capability due to parallel-serial range-extender
- Multi-speed Dedicated Range-Extender Transmission (DRT) for efficient driving
- Use of cost-effective components thanks to operating point selection via multi-speed gearbox

**Aaron Kappes, M. Sc.,** Research Associate, Co-author: Prof. Dr.-Ing. Stephan Rinderknecht, both Institute for Mechatronic Systems, Technical University of Darmstadt

#### Range extenders with dual rotor, radial flux machines for compact and efficient hybrid architectures

- US/China: Range-extender serial hybrids remain key (distance, charging limits)
- DeepDrive MG250: novel, highly integrated range-extender technology
- Dual-rotor radial-flux motor + integrated SiC inverter in a compact package
- 120 kW continuous / 24 kg / up to 96.9 % efficiency – ideal for PHEV & E-REX

**Dr. Alexander Rosen,** Chief-Engineer and Co-Founder, Co-authors: Tristan Völker, Adrian Wanner, all DeepDrive GmbH, Garching, Germany

## Room 3



### EV Topologies

**Prof. Dr.-Ing. Karsten Stahl,**  
Technical University of Munich

#### Multi-criteria optimization of innovative multi-gear and multi-motor electric powertrains

- Problem definition and overview
- Methodology
- Results and convergence analysis
- Outlook

**Christopher Reus, M. Sc.,** Research Associate, Co-author: Prof. Dr.-Ing. Stephan Rinderknecht, both Institute for Mechatronic Systems, Technical University of Darmstadt

#### Pioneering the future of low-cost BEVs: Design and development of a novel automatic powershift transmission

- A fully mechanical, actuator-free two-speed transmission that automatically adapts to load conditions for improved efficiency and performance
- Smooth, torque-continuous shifting and stable hysteresis verified through bench testing and hardware-in-the-loop vehicle simulations
- A lightweight, low-cost drivetrain technology enabling greater range, efficiency, and practicality for next-generation small battery-electric vehicles

**Dipl.-Ing. Dr.techn. Jürgen Tromayer,** Senior Scientist, Design, Co-authors: Dipl.-Ing. Christof Napetschnig, Dipl.-Ing. David Stückler, all Institute of Thermodynamics and Sustainable Propulsion Systems, Technical University of Graz, Austria

#### High performance in wheel platform for seamless integration in electrified vehicles

- Integration of an in-wheel system in an existing vehicle chassis, overview of changes and components
- In-wheel drive characteristics and thermal performance
- High speed slip control impact on vehicle performance

**Jurij Kern,** Product Manager, Co-author: Blaž Grafenauer, both Elaphe Propulsion Technologies Ltd., Ljubljana, Slovenia

## Auditorium



### AI in the Product Development Process

**Daniel Borowitzka, M. Eng.,**  
BMW AG

#### 14:30 Data-driven prediction of acoustic properties for electric drives in gear manufacturing using machine learning

- Gear manufacturing
- Machine Learning
- Acoustic prediction electric drives

**Bastian Friedrich, M. Sc.,** Axle and Electric Transmission Technologist, Co-authors: Felix Leng, M. Sc., both BMW AG, Dingolfing, Germany, Dr. Andrea Turcati, OmegaLambdaTec GmbH, Munich, Germany

#### 15:00 Data-driven virtual powertrain development: From requirements to smart automotive systems through MBSE & AI-enhanced digital twins

- Data-driven virtual powertrain development through integrated MBSE frameworks
- AI-enhanced Digital Twins and RAG for virtual powertrain validation
- Continuous system validation via DevOps/MLOps CI/CD workflows
- Live power electronics validation demo showcasing automotive business case
- Scalable strategy for digital transformation in automotive engineering

**René Honcak, M. Sc.,** Head Of Digital Twin Powertrain Solution, ZF Friedrichshafen AG, Friedrichshafen, Germany

#### 15:30 LI Auto digitalization and artificial intelligence in the new generation of electric drive powertrain platform

- Edge AI solution for new feature in electric drive system, using simple neural network in uC of inverter
- Cloud based predictive diagnosis solution for product reliability, using complex neural network in cloud
- AI agent solution for R&D efficiency improvement
- Fine-tuning of VLM for manufacturing quality improvement

**Dr. Xiang Liu.,** E-drive Intelligence Manager, Co-authors: Yong Ma, Yi Feng, all LI Auto Inc, Shanghai, China

16:00 **Meet & Greet** – Coffee break in the exhibition area with car presentation

## Room 2



### Materials and Sustainability in E-Motors

**Prof. Dr.-Ing. Yves Burkhardt,**  
Technical University of Darmstadt

#### Raw material prices as a decision basis: Motor type selection in e-mobility

- Analysis of how raw material price fluctuations impact the economics and sustainability of electric motors
- Comparison of PSM, ASM, and FSM under different price and scenario assumptions
- Effects on costs, CO<sub>2</sub> footprint, and material efficiency across the supply chain
- Strategic recommendations for technology decisions and sourcing in a volatile market

**Johannes Flemming, M. Sc.,** Team Lead E-Drive, P3 group GmbH, Stuttgart, Germany

#### Sustainability potentials for e-motors in a circular economy

- Circular economy as a response to global uncertainties
- Status quo and potentials of r-strategies for HV e-motors
- Practical approaches and potentials through state-of-health monitoring
- Technologies in focus: Impact of e-motor design and new e-motor technologies

**Dr.-Ing. Daniel Heinrich,** Expert Load Cycles & Test Development, Co-authors: Dr.-Ing. Benedikt Groschup, both Schaeffler Automotive Buehl GmbH & Co. KG, Bühl, Germany, Maximilian Miereisz, M. Sc., Schaeffler Technologies AG & Co. KG, Herzogenaurach, Germany

#### Rotor shaft as the center of traction motor – From the idea to the series production of a three-part rotor shaft with polygonal tube

- Innovative rotor shaft with polygon tube: Setting new standards in assembly, cooling, and lightweight construction thanks to its three-part design
- Cold joining instead of heating: Energy-efficient manufacturing with CO<sub>2</sub> savings and simplified assembly
- More than just a carrier: How the rotor shaft becomes a functional platform for sensor technology, grounding, and cooling
- Validated innovation: Presentation of experimental results on cold joining, cooling performance, and lightweight construction potential

**Hüseyin Gürbüz, M. Sc.,** Head of Product Engineering Rotor Shaft, Co-author: Dr. Ing. Benjamin Dönges, both Muhr und Bender KG, Weitefeld, Germany

## Room 3



### Trends in Power Electronics for Drivetrains

**Dr. Christian Wachtendorf,**  
Volkswagen AG

#### Demonstration of the first automotive traction inverter with GaN Power Stage for a passenger car

- Wide band gap semiconductors GaN, applications, robustness
- Driver circuit for GaN-Power Stage
- Cost outlook, comparison to SiC-semiconductors
- Usage in a Tesla S Democar, performance, measurements

**Dipl.-Ing. Mathias Deiml,** Pre-Development, AVL Software and Functions GmbH, Regensburg, Germany, Co-authors: Dipl.-Ing. (FH) Werner Ness, Dipl.-Ing. (FH), Dipl. Wirtschaftsing. (FH) Johann Winter, both VisIC Austria GmbH, Wien, Austria

#### Enabling high-performance electric drive units through 900V system architectures and inverter innovation

- Automotive inverters
- Electric drive unit platforms
- Power electronics
- 900 V technology

**PhD Andreas Andersson,** Principal Engineer Electric Drives, Co-authors: Dr. Håkan Sandquist, Dr. Simon Klacar, all InfiMotion Technology Europe AB, Gothenburg, Sweden

#### The future of automotive power electronics: Potential of high-level integration

- High-level integration as a key to cost and assembly space optimization
- Synergetic component utilization among power electronics modules
- Modular integration approach for use across different vehicle segments

**Cornelius Rettner, M. Sc.,** Head of Advanced Development Power Electronics, Volkswagen AG, Gaimersheim, Germany

## Auditorium



### Optimized E-Drives

Dipl.-Ing. Thomas Landsherr,  
TRATON R&D Germany GmbH

- 16:45 **Investigations on the efficiency and heat balance of highly integrated E-Drives with high power density**
- Development trends and challenges in the design of modern electric drive units
  - Simulative determination of the efficiency of an electric drive unit
  - Calculation of the temperature distribution and heat balance of a highly integrated electric drive unit, taking into account different lubrication and cooling concepts
  - Outlook: Experimental investigations to compare the values determined by simulation
- Bjarne Schwarz, M. Sc.**, Research Associate, EHL-Tribological-Contact and Efficiency, Co-authors: Prof. Dr.-Ing. Karsten Stahl, Dr.-Ing. Thomas Lohner, all Institute of Machine Elements, Gear Research Center (FZG), TUM School of Engineering and Design, Technical University of Munich, Garching, Germany

- 17:15 **Multi-objective optimization of a modular eDrive platform for truck portfolios considering transmission lifetime and load capacity**
- Reduction of component and production costs through increasing drivetrain commonality
  - Trade-off between cost and efficiency in drivetrains
  - Assessment of potential drivetrain oversizing due to component commonality
  - Necessary drivetrain adaptations due to insufficient load capacity requirements
- Philip Hätscher, M. Sc.**, Research Associate, Co-authors: Prof. Dr. André Casal Kulzer, both, Institute for Automotive Engineering Stuttgart, Germany, Dr. Sven Köller, Daimler Truck AG, Leinfelden-Echterdingen, Germany

- 17:45 **Harmonic current injection in electric drive systems: Impacts on NVH, temperatur, and reliability**
- System-level simulation of HCI considering electrical, mechanical, and thermal interactions
  - Impact of inverter switching frequency on NVH behavior, losses, and temperature rise
  - Analysis of HCI-induced mechanical loads on gearings and bearings
  - Evaluation of trade-offs between noise reduction, efficiency, and thermal limits
- Marc Janousek, M. Sc.**, Application Engineer, AST Mechanic, Co-authors: Dr. Denis Werner, both AVL Deutschland GmbH, Munich, Germany, Dipl.-Ing. Michael Schrottner, AVL List GmbH, Graz, Austria

- 18:15 **End of the 1st congress day**

- 18:45 **Dritev Summer Night at Kurhaus Baden-Baden – The place you have to be!**

## Room 2



### Customer, Regulations, Environment

Dipl.-Ing. Georg Bednarek

- The future of drivetech – How electrification and digitalization reshape the market**
- Current market and technology trends in the electrified powertrain
  - Impact of transformation on value creation, portfolios, and R&D structures
  - Key success factors: Strategic focus, organizational transformation, partnerships
- Dr.-Ing. Michael Hein**, Senior Project Manager, Co-author: Dr.-Ing. Hans-Josef Mayer, both Radermacher & Partner GmbH, Starnberg, Germany

- Legal requirements at one click using generative AI methods**
- Generative AI as an innovation driver for the automotive industry
  - Application of generative AI for specifying legal requirements
  - Traceable results for extraction, updating & comparison of requirements through decomposition method
  - Significant effort reduction while improving quality
- Dr.-Ing. Lukas Schäfers**, Team Lead Systems Engineering & AI Solutions, Co-authors: Dr.-Ing. René Savelsberg, Fabian Schmidt, all FEV Europe GmbH, Aachen, Germany

- CO<sub>2</sub> footprint of alternative powertrain solutions for commercial**
- Comparative life cycle analysis of alternative drive concepts for heavy commercial vehicles
  - Influence of renewable energies in combination with alternative powertrain concepts on long-distance transport
  - Ecological break-even of battery-electric commercial vehicles
- Özcan Deniz, M. A.**, System Engineer Vehicle Systems, Mahle International GmbH, Stuttgart, Germany

## Room 3



### Bearing Currents

Prof. Dr.-Ing. Stephan Rinderknecht,  
Technical University of Darmstadt

- Parasitic bearing currents in oil-cooled electric motors – fundamentals and initial results**
- Parasitic bearing currents
  - Electric motors for 800 V DC-link voltage
  - Direct oil cooling
  - HF model
- Robin Charissé, M. Sc.**, Research assistant Electric Drive Systems, Technical University of Darmstadt, Germany, Co-author: Stefan Paulus, M. Sc., RPTU Kaiserslautern-Landau, Germany

- Simulation of parasitic currents in drive train systems**
- Electric modelling of contacting components (bearings, gears, brushes)
  - Lumped models for the excitation of parasitic currents in electric motors (EDM, circular)
  - Influence of inductances of shafts and housings
- Dr. Bernhard Jakob**, Specialist Technical Calculation, R&D Analysis Methods Fundamentals, Co-authors: Martin Correns, Dr.-Ing. Dominik Stretz, all Schaeffler Technologies AG & Co. KG, Herzogenaurach, Germany

- Insulation solutions for e-drives: Because sparks belong in romance, not bearings**
- EV voltage surge: Higher voltages increase bearing electrical corrosion, threatening e-drive reliability.
  - Current fixes fall short: Ceramic hybrid bearings insulate well but are costly and size-limited
  - Polyimide insulation: Unreinforced polyimide delivers strong insulation, ceramic-like impedance, heat tolerance, and cost efficiency for e-axles
  - Smart integration – Shaft, housing or bearing: Direct integration into the housing during aluminum die casting or alternatively press-fit onto the shaft/bearing
- Dipl.-Ing. Ruth Jackowiak**, Technical Consultant Industrial Solutions, Co-authors: Philippe Pauchard, B. Sc., both DuPont Specialty Products Operations Sàrl, Switzerland, Christoph Berger, M. Sc., DuPont de Nemours Deutschland GmbH, Neu-Isenburg, Germany

## 2nd Congress day Wednesday, July 1, 2026

### Auditorium



#### Immersion Cooling

**Dr.-Ing. Jens Lüder,**  
Robert Bosch GmbH

#### 08:30 Introduction of battery immersion cooling into the vehicle thermal system

- Uniform temperature distribution over lifetime
- Integration into the vehicle thermal system
- Cost considerations

**Dr. rer. nat. Stefan Scherer,** Systems Engineering Oil Flow Controls, Robert Bosch GmbH, Schwieberdingen, Germany,  
Co-authors: Dr. Thomas Raffius, Alexander Fuchs, M.Sc., Robert Bosch GmbH, Stuttgart, Germany

#### 09:00 Multi-scale CFD study of flow guide designs in immersion cooled prismatic cell battery module

- Multi scale modelling: Coupled lumped-parameter, 2D CFD, and 3D CFD approaches to evaluate cooling performance of prismatic battery modules
- Flow guider concept development: Design and assessment of simple, easily applied, internal flow guide geometries to reduce hotspots and improve surface temperature uniformity on immersion cooled batteries
- 2D vs. 3D simulation insights: Use of 2D sliced CFD models for optimizing design for cooling performance, and capture the 3rd dimension effects by 3D finalized CFD study
- Performance optimization metrics: Evaluation of flow uniformity, pressure drop, and surface temperature gradients to enable higher C rate capability with minimal architectural changes

**Dr. Guven Ogus,** Research Engineer, MotionS Corelab – Drivetrain Technologies, Flanders Make NV, Leuven, Belgium, Co-author: Lander Cnudde, University of Gent, Belgium

#### 09:30 Switch ON an electric future – Immersion cooling with dielectric fluids for EV batteries: Enhancing performance, safety, and sustainability

- Increased battery health
- Enhanced safety
- Performance benefits

**Dr. Esther Nieland,** Technologist PD Thermal Management Fluids, Castrol Germany GmbH, Hamburg, Germany

### Room 2



#### E-Drive Topologies

**Jens Saberi, M. Sc.,**  
Magna PT B.V. & Co. KGaA

#### High revolution drive: High-rpm concept for electric drives

- E-motor with about 30.000 rpm leads to significant weight reduction
- Reduction gear with high ratio and challenges of NVH and efficiency
- Entire system weight benefit more than 20 % possible

**Dr. rer. nat. Stephan Demmerer,** Head of Advanced Engineering E-Drives, Co-authors: Dr. Christian Gürlich, Dipl.-Ing. (FH) David Jonak, all ZF Friedrichshafen AG, Friedrichshafen, Germany

#### Next generation drivetrain, without rare earths

- State of the art motor technologies without rare earths and their issues
- Why induction motors are no longer used as primary drives
- How the combination of axial flux and induction technology changes the game
- Mass production issues of axial flux machines and how EMIL wants to solve them

**Maximilian Güttinger,** CEO & Co-Founder, Emil Motors GmbH, Hersbruck, Germany

#### Advanced winding technology for axial flux motors to enhance performance and efficiency

- Challenges in winding design for axial flux motors (AFM)
- Advantages and challenges of distributed winding topologies for AFM
- Example designs of distributed windings based on continuous wave winding technology
- Development of a prototype process chain for the associated manufacturing technology

**Dr.-Ing. Florian Sell-Le Blanc,** Manager Advanced E-Motor Technology, Co-authors: Dr.-Ing. Andreas Langheck, both Schaeffler Automotive Buehl GmbH & Co. KG, Bühl, Germany, David Drexler, M. Sc., RWTH Aachen University, Aachen, Germany

### Room 3



#### Architecture

**Dr.-Ing. Gerd Rösel,**  
Schaeffler Technologies AG & Co.

#### Virtual acoustic development of electric drives considering realistic inverter effects

- From idealized to real phase current waveforms: Realistic acoustic simulation of electric drives through coupled inverter/magnetic field simulation
- Accurate air gap forces as input for structural dynamic calculations and reliable noise predictions
- Early optimization of the inverter operating strategy improves acoustics, efficiency, and development time

**Dipl.-Ing. Marcus Kruse,** Development Engineer Simulation and Acoustics, Co-author: Marco Brüggemann, both Volkswagen AG, Baunatal, Germany

#### AI-powered optimization for engineering design of e-drive systems

- Bi-level AI-driven design framework: Integration of reinforcement learning with non-linear constrained optimization for automated gearbox synthesis
- Solver-in-the-loop learning: Real-time coupling between a CasADi-based NLP (IPOPT/SQP) and the RL agent for physics-consistent feedback and feasibility
- Physics-informed decision intelligence: Embedding domain knowledge to enhance feasibility and improve sample efficiency
- Application to e-drive gearbox design: Demonstration of fast Pareto-optimal trade-off exploration (efficiency vs. mass) across multiple gearbox architectures

**Prof. Dr. Ir. Theo Hofman,** Group leader, Professor, Co-author: Ir. Jorn van Kampen, both Eindhoven University of Technology, Eindhoven, The Netherlands

#### X-in-1 Power Electronics: Battery vs. axle? Optimal integration strategies for future EV architectures

- Optimal integration strategies for power electronics (x-in-1) in electric vehicles (EVs)
- Analysis of integration locations (battery vs. e-axle) and key components (inverters, DC/DC, AC chargers)
- Challenges: OEM vs. Tier-1, packaging constraints, thermal management, EMC, NVH, cost, manufacturability
- Emphasis on modularity and system-wide optimization for scalability and future EV architectures

**Dipl.-Ing. Jens Ritzert,** Project Manager Predevelopment for Electric Powertrain Traction Inverter, Co-authors: Dr. Hans Christian Krahl, Tobias Tippelt, all Robert Bosch GmbH, Schwieberdingen, Germany

## 10:00 From regulation to innovation: Tackling thermal runaway propagation through simulation and immersion cooling

- Get insights on the global regulatory landscape: How stricter global safety standards are reshaping requirements for thermal runaway propagation
- Learn how advanced simulation approaches help design solutions for thermal runaway propagation mitigation and reduce the need of testing
- Discover how immersion cooling can help mitigate propagation risks

**Fabian Menz, M. Sc.**, CAE-Engineer Business-Unit Battery Technologie, Co-authors: Dr. Moritz Pausch, Jeanne Fauß, all Elring-Klinger AG, Neuffen, Germany

## 10:30 Meet & Greet – Coffee break in the exhibition area with car presentation

### Auditorium



#### Integrating AI into Products

**Dr.-Ing. Gerd Rösel**,  
Schaeffler Technologies AG & Co.

## 11:15 A cloud-based approach: Neural networks for live temperature monitoring in a PHEV

- AI-based thermal modeling of an electric motor in a PHEV with neural networks
- IoT device uploads real vehicle data (CAN and sensor data) to the cloud via mobile network
- Cloud data is used for temperature monitoring and further training of the neural networks
- Potentials for cost reduction and improvement of model accuracy are demonstrated

**Marcel Adrian, M. Sc.**, System Engineer, Advanced Development Concepts, Co-authors: Dr. Georg Göppert, both Schaeffler Automotive Buehl GmbH & Co. KG, Bühl, Germany, Krisztián Gere, B. Sc., Schaeffler Savaria Kft., Szombathely, Hungary

## 11:45 AI-based virtual sensors and their applications in vehicles

- Virtual sensors
- AI
- Neural networks

**Dr. rer. nat. Jochen Fiedler**, Research Associate, Mathematics for Vehicle Engineering, Co-author: Dr. Michael Burger, both Fraunhofer Institute for Industrial Mathematics (ITWM), Kaiserslautern, Germany

## 2-speed electric drive unit with dual rotor electric machine and modular range extender variant

- Description of drive unit architecture
- Efficiency advantage in combination with dual rotor electric machine
- Electromechanical actuation system
- Modular range-extender option with parallel drive

**Dr.-Ing. Gereon Hellenbroich**, Manager E-Drive & Transmission, Co-authors: William Lee, Valeriy Shapovalov, all FEV Europe GmbH, Aachen, Germany

### Room 2



#### Lubrication

**Prof. Dr.-Ing. Karl Viktor Schaller**,  
Technical University of Munich

## Smartification of electric oil pumps using multiple flow to optimize powertrain efficiency

- Challenge & solution: Multiflow pumps offer an integrated solution for intelligent flow control and efficiency optimization
- Key benefits: Demand-based flow, reduced complexity, lower production & carbon footprint
- Dynamic adaptability: Multi-flow pumps adapt dynamically to vehicle requirements, maximizing the efficiency of the entire powertrain
- Presentation Content: Design, structure, pros & cons of various pump types (G-rotor, vane, gear pump)

**Philip Bahr, M. Eng.**, Application Leader Electric Oil Pumps, Hydraulic Systems, Valeo, Ebern, Germany

## Future transmission fluids for electrified drivetrains with integrated wet clutch brakes and enhanced efficiency

- Innovative formulation strategies and the potential of viscosity reduction to uncover pathways to improved energy efficiency without compromising hardware integrity
- Driving sustainability through circular lubricant ecosystems and multifunctional fluids
- Requirements on lubricants to enable the integration of wet clutch brakes (not only) in electrical vehicles

**Dipl.-Chem. Vera Zahari**, Senior Technologist PD Driveline & Advanced Electrification Fluids, Co-authors: Dr. Christian Nörnberg, Dr. Thomas Hellwig, all Castrol Germany GmbH, Driveline Technology Centre, Glinde, Germany

## In-house development and design of an EMC filter for unshielded 800V drive systems

- EMC filter design
- Unshielded 800V high-voltage systems
- Simulation-based EMC filter development

**Dr. rer. nat. Peter Olbrich**, Hardware Development Engineer (EMC), Co-authors: Jens-Peter Nickel, Dr. Bastian Arndt, all Volkswagen AG, Baunatal, Germany

### Room 3



#### Manufacturing Technology

**Prof. Dr.-Ing. Yves Burkhardt**,  
Technical University of Darmstadt

## Impact of different stacking technologies & material types on e-motor core properties

- Challenges in implementation of trends (E-motor cores)
- Customer demands and market offer (E-Mobility)
- Field analysis: Impact of technology selection on product properties
- Conclusion & recommendations

**Duncan Kirigo, M. Eng.**, Senior Adhesive Expert, Research & Development, Co-authors: Dipl.-Ing. Markus Lock, Björn Böker, all Feintool System Parts Sachsenheim GmbH, Sachsenheim, Germany

## Sustainable rotor shaft manufacturing: Reducing the CO<sub>2</sub>-footprint with cold forming innovations

- Reduction of CO<sub>2</sub>-footprint
- Sustainable production of rotor shafts
- Simulation, analytical and experimental results
- Helical gear manufacturing by innovative cold forming process

**Peter Karch**, Technical Sales Engineer, Co-authors: Stefanie Schwertel, Maximilian Ludwig, all Felss Systems GmbH, Königsbach-Stein, Germany

## 12:15 Sensitivity analysis and surrogate modeling of geometric and material tolerances in an axial flux machine

- Axial flux machines enable high torque density and a compact axial design, making them well-suited for electric vehicle applications
- 2D finite element simulations, modeled as linear motor slices, combined with surrogate models, allow a reduction in simulation time of up to 95 % compared to full 3D FE
- Air gap variations, adhesive layer thickness, and remanent flux density of permanent magnets are among the most significant parameters, strongly affecting performance variation
- Adhesive gaps result in higher magnetic reluctance and promote leakage flux

**Karsten Müller**, PhD candidate, Predevelopment Drive unit & Mechatronics, Mercedes-Benz Group AG, Stuttgart, Co-authors: Prof. Dr.-Ing. Herbert De Gerssem, Prof. Dr.-Ing. Yves Burkhardt, both Technical University of Darmstadt, Germany

## Low viscosity heavy-duty EV fluids: How esters can contribute

- Heavy-duty e-driveline
- Lubricating oil
- Low viscosity
- Ester base fluid

**Dipl.-Ing. (FH) Marco Auerbach**, Technology Development Manager, Cargill Bioindustrial, Gouda, The Netherlands

## Implementation of machine learning in definition and production of transmissions for electric vehicles

- Transmissions for electric vehicles
- Micro geometry of helical gears
- Parametrisation and pattern recognition
- Correlation and machine learning

**Dr. Artur Grunwald**, Manager Mechanical System Development, Co-authors: Dr.-Ing. Peter Geradts, Rudolf Schlack, all Dauch, Germany

## 12:45 Time for Business Lunch – Meet & Greet in the exhibition area with car presentation

### Auditorium – Plenary

**Dipl.-Ing. Thomas Pfund**, Schaeffler Automotive

## 14:15 Joint electrification technologies for BEVs and hybrid – Synergies, scaling and trends

- Market trends in BEV, hybrid & REEV
- Requirements for powertrain platforms
- Holistic solutions to maintain competitiveness

**Dr. Otmar Scharrer**, Head of R&D Powertrain Technologies, ZF Friedrichshafen AG, Friedrichshafen, Germany

## 14:45 Software Defined Vehicle (SDV), future challenges and opportunities for vehicle powertrain systems

- From conventional powertrains to software-defined systems
- New opportunities enabled by connectivity, AI, and over-the-air updates
- Intelligent control of efficiency, range, and comfort
- Power on Demand and highly personalized driving experiences in the SDV era

**Derek de Bono**, Software Defined Vehicle Vice President, Valeo

## 15:15 Powertrains and Emotions – Is It All Over Already?

- Was everything really better in the past when it came to engines and the emotional appeal of driving?
- What creates emotion in a powertrain? Performance, torque, gear changes, or sound? The fascination of imperfection.
- Are all electric motors the same, or can they also be differentiated in terms of characteristics, behavior, and technology?
- Can simulated “fake sound” create an emotional connection with car enthusiasts? What should it be based on?
- What type of powertrain do the super sports cars of the future need? Electric, hybrid, or pure internal combustion engines (powered by e-fuels)?

**Dipl.-Ing. Alexander Bloch**, Chief Correspondent, auto motor und sport, VOX, Cologne

15:45

### Plenary discussion

**Dipl.-Ing. Thomas Pfund**, Schaeffler Automotive

## 16:00 Awarding of the Best Presentation Award for Junior Engineers

16:05 Closing remarks

16:15 End of the congress

## Scientific support of the congress

### The VDI Society Product and Process Design (GPP)

The VDI Society Product and Process Design (VDI-GPP) and its technical divisions provide all sectors with verified knowledge on the design of products and processes and their optimization in terms of quality and the time- and cost-benefit ratio. This verified knowledge covers the entire product lifecycle, from the product idea and product development, marketing and service to recycling using optimized methods, tools and systems, including the necessary information technology. This ensures the successful connection of market and technology for the purpose of sustainable growth and profit. The VDI-GPP – as the largest technical division in the VDI – provides a platform for specialist discussion and cooperation ranging from the technological state of the art and continuous improvement to trends in development. The task of the VDI-GPP is to concentrate the extensive range of services of the VDI in these fields, display them in summary and constantly improve them. This also includes the lively exchange of ideas with other VDI societies. The activities of the society are planned and coordinated by an advisory board staffed with decision-makers working on an honorary basis.

[www.vdi.de/gpp](http://www.vdi.de/gpp)

### The VDI Society Automotive and Traffic Systems Technology (FVT)

The VDI Society Automotive and Traffic Systems Technologies (FVT) with its five Technical Divisions offers a home for engineers from a wide range of disciplines in the fields of “road”, “rail”, “air” and “water” transport. Through active interplay with the working groups of the VDI Regional Associations, the students and young engineers as well as the other VDI Technical Societies, the VDI FVT is networked nationally and internationally with other cooperation partners. The stated task of the VDI FVT is to strengthen the perception of the engineering profession and to establish the VDI as a technical-scientific opinion leader in professional circles, politics and society. The aim here is to promote the interaction of the various mobility areas and to provide technical impetus, as well as to develop perspectives for cross-sectional topics relating to “People and Mobility” and “Means of Transport and Infrastructure”.

[www.vdi.de/fvt](http://www.vdi.de/fvt)

## Dritev interactive – Adding value to your business

### Speakers Corner

#### Ask the drive system experts

Do you still have questions? You are welcome to meet our speakers in the speakers corner following the sessions. Straightforward, subject-specific and instantaneously.

### Dritev Summer Night

#### Your networking hub for the international powertrain community

Your networking spot for the international powertrain community: Meet colleagues and project partners and use the informal atmosphere to get to network anew.



### Car Presentations

#### Powertrain systems with an emotional appeal

Whether it's a serial production vehicle, a fancy roadster or an eyecatcher – even the best drive unit needs its customised appearance. Experience the latest vehicle concepts and find out more from experts on site about the special features of the vehicles and the integration of the different drive solutions.

The following vehicles will be shown\*:

- Infimotion
- Kistler Instrumente GmbH
- Liebherr
- Mercedes-Benz
- Opel
- Tremec
- Volkswagen

\*March 2026



## Dritev interactive – Adding value to your business

### Poster Exhibition\*

**Innovation powered by high-fidelity multiphysics modeling: A holistic system optimization of BorgWarner's next generation integrated drive modules**

**Dr. Pascal David**, Senior Engineering Manager Technologies and Innovations Systems Simulations Electric Drives, Borg-Warner Luxembourg Automotive Systems S.A., Hautcharage, Luxembourg

**Accelerated bottom-up development of an electric motor drive simulation toolset with low resource utilization**

**Máté Horvát**, Lead Motor Control Engineer, EXEDY Clutch Europe Ltd., Towcester, United Kingdom

**MAGIT® gas injection technology for innovative hollow structures in die casting – a DC-DC heat sink case study**

**Dipl.-Ing. Marcel Op de Laak**, CEO and Head of Development, TiK – Technologie in Kunststoff/Produktentwicklung und Prüf-dienstleistungen GmbH, Teningen, Germany

**Efficient simulation of electrical circuits for inverter software development in electric vehicles**

**Dr. Felix Pfister**, Lead Global Sales Strategy Manager, IPG Automotive GmbH, Karlsruhe, Germany

**Development of an optimized experimental design for degrading modeling of PEM fuel cells under real driving profiles**

**Sarah Roeck, M. Sc.**, Doctoral Researcher, IPEK – Institute of Product Engineering at KIT (Karlsruhe Institute of Technology), Karlsruhe, Germany

**Next generation of ultra-high-strength fastener**

**Dipl.-Ing. (FH) MBA Florian Johannes Heine**, Manager Application Engineering, KAMAX Automotive GmbH, Homberg, Germany

**AI-powered requirements engineering & design optimization of electric powertrains**

**Dipl.-Ing. Dr.techn. Martin Hofstetter**, Head of E-Mobility and Alternative Drivetrains Research Group, Technical University of Graz, Austria

**Design optimization of a two-stage EV gearbox using the multiverse optimization algorithm based on real-world load duration distribution**

**Dong-jo Moon**, PhD Candidate, Biosystems Engineering, Seoul National University, Südkorea

**Development of an electrified tracked-vehicle simulation model for optimal steering performance**

**Gyuha Han**, PhD Candidate, Biosystems Engineering, Seoul National University, South Korea

**Efficient robust systems engineering for accelerated product maturity**

**Dipl.-Ing. Ralph Fleuren**, Senior Produkt Manager, Electric Powertrain, FEV Europe GmbH, Aachen, Germany

**Tailor-made refrigerant valves for your system**

**Max Podszun, M. Eng.**, Technical Project Leader, Hilite Germany GmbH, Marktheidenfeld, Germany

**Function development and optimization of drive components in a customized test environment**

**Prof. DI Dr. Michael Bader**, Institute of Machine Components and Methods of Development, Technical University of Graz, Austria

**Requirements and strategies for the integration of hydrogen fuel cell systems in mobile machines**

**Johann von Harling, M. Sc.**, Research Associate Hydrogen Technologies, Production Engineering of E-Mobility Components (PEM), RWTH Aachen University, Germany

**Generating hydrogen where it is needed – decentralized supply concepts for mobile machines in open-cast mining**

**Maximilian Bayerlein, M. Sc.**, Group Lead Alternative Powertrain Technologies, Production Engineering of E-Mobility Components (PEM), RWTH Aachen University, Germany

**Increasing the storage density and energy efficiency of emission-free drives through the use and intelligent integration of liquid hydrogen storage systems and fuel cells**

**Fabian Jonen, M. Sc.**, Research Associate Hydrogen Technologies, Production Engineering of E-Mobility Components (PEM), RWTH Aachen University, Germany

**Simulative powertrain design of electrified working machines based on real usage data**

**Michael Siegel, M. Eng.**, Research Associate, Faculty of Mechanical and Civil Engineering, Hochschule Landshut, University of Applied Sciences, Landshut, Germany

**New electric dynamic shift drive**

**Moritz Euler, M. Sc.**, Development Engineer, Design & Development, Antriebstechnik-Roth GmbH, Much, Germany

\*March 2026

## Powertrain Systems in Mobile Machines 2026

Visit for free



**Chair: Prof. Dr. Ludger Frerichs**, Director, Institute of Mobile Machines and Commercial Vehicles (IMN), Technische Universität Braunschweig, Germany

### 1st Conference day Tuesday, June 30, 2026

- 09:10 **Plenary speeches with KREISEL Electric, DFKI, Robert Bosch**  
**Dipl.-Ing. Thomas Pfund**, President Business Unit E-Motors, Schaeffler Automotive, Bühl (Details on page 3)



10:50 **Meet & Greet – Coffee break**

- 11:25 **Opening of VDI Conference Powertrain Systems in Mobile Machines**  
**Prof. Dr. Ludger Frerichs**, IMN, Technische Universität Braunschweig  
**Caroline Körber**, VDI Wissensforum

#### Process drives

- 11:30 **New powertrain for a next generation of large square balers**  
**Dipl.-Ing. Andreas Roth**, Antriebstechnik-Roth
- 12:00 **Electrification of special construction method cutter soil mixing (CSM)**  
**Dr.-Ing. Hans-Philipp Otto**, BAUER Maschinen
- 12:30 **New clutch-controlled CVT in fertiliser spreader operation**  
**Moritz Euler, M. Sc.**, Antriebstechnik-Roth



13:00 **Time for Business Lunch**

#### Traction drive

- 14:30 **Line traction advantages and solution for automatic power distribution to all wheels in practice**  
**Stefan Herr, M. Sc.**, former MOBIMA, Karlsruher Institut für Technologie (KIT)
- 15:00 **Dual-speed transmission for electric off-highway machines**  
**Lorenzo Serrao, Ph.D.**, Allison Off-Highway Drive and Motion Systems
- 15:30 **A case study on a 7-ton parallel-series hybrid wheel loader**  
**Dr.-Ing. Joschka Schaub**, FEV Europe & **Yuki Kakichi, M. Sc.**, Yanmar Holdings



16:00 **Meet & Greet – Coffee break**

#### Electric systems architecture

- 16:45 **Innovative drive and charging solution for automated field work**  
**Dr.-Ing. Sven Klausner**, Fraunhofer Institute for Transportation and Infrastructure Systems IVI
- 17:15 **System architecture development for advanced cooling and heating systems in electrified agricultural machinery**  
**Benjamin Wilk, M. Sc.**, CLAAS Industrietechnik
- 17:45 **Challenges with the electrification of construction machinery beyond the machine itself**  
**Dipl.-Ing. Daniel Bachmann**, Liebherr Energy Solutions

18:15 **End of the 1st conference day**

18:45 **Get-together: Dritev Summer Night**

### 2nd Conference day Wednesday, July 1, 2026

#### Real world experience of electrification

- 08:30 **10 years of electrification of mobile machinery with automotive components: Experiences, challenges and solutions**  
**Dipl.-Ing. Stephan Dirnberger**, Bosch Engineering
- 09:00 **From prototype to production vehicle: Development of an electrified tractor**  
**Tobias Steidle, M. Eng.**, AGCO
- 09:30 **Drivetrain design for a battery electric, agricultural, utility, tractor**  
**Eli Van Boening**, John Deere
- 10:00 **Successful electrification of towbarless aircraft tractors – How to transform an industry through customer value**  
**Dipl.-Ing. Martin Rieser**, Goldhofer



10:30 **Meet & Greet – Coffee break**

#### Powertrain comparison

- 11:15 **System follows application: Architectures in mobile working machines**  
**Dr.-Ing. Thomas Woopen**, AVL Deutschland
- 11:45 **Hydrogen engine or fuel cell tractors? Comparison of operational performance on medium-scale german farms**  
**Timo Wyszynski, M. Sc.**, IMN, Technische Universität Braunschweig
- 12:15 **Electrifying agriculture: Exploring hybrid powertrain solutions for tractors**  
**Dr. Dipl.-Ing. Christoph Schörghuber**, AVL List



12:45 **Time for Business Lunch**

#### Systemic developments

- 14:15 **Electrification of Off-Highway machinery and modular battery swapping: Practical advantages and technical challenges**  
**Sebastian Schlegel, M. Sc.**, raumideen | ONOX
- 14:45 **Hydrogen in agriculture – An energy self-supply-concept for an agricultural business**  
**Hendrik Vorjans, M. Sc.**, ika, RWTH Aachen University
- 15:15 **Mining reinvented: The T 264's journey to zero emissions**  
**Dr.-Ing. Isabelle Ays, MBA**, Liebherr-Mining Equipment Colmar
- 15:45 **Closing remarks**  
**Prof. Dr. Ludger Frerichs**, IMN, Technische Universität Braunschweig

#### Joint plenary session



16:00 **Awarding of the best presentation for junior engineers**

16:05 **Common closing remarks**

16:15 **End of the International VDI congress**

Sign up and details  
[www.vdicongress.com/01TA807026](http://www.vdicongress.com/01TA807026)



## The brains behind the Congress – The Program Committee



### 1st row from left to right

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**Dipl.-Ing. Georg Bednarek**, formerly Director Regulations & Certification, Stellantis N.V., Rüsselsheim, Germany

**Daniel Borowitzka, M. Eng.**, Head of Advanced Development Chassis and Drive Systems, BMW AG, Munich, Germany

**Prof. Dr. Carsten Bündler**, Mechanical Engineering, SRH University of Applied Sciences Heidelberg, Germany

**Prof. Dr.-Ing. Yves Burkhardt**, Head of the Institute for Electrical Energy Conversion – Electrical Drive Systems, Technical University of Darmstadt, Germany

**Dr.-Ing. Thomas Casper**, Manager Combustion- & Hybrid-Drivetrain-system, Transmission and Hybridcomponents, Dr. Ing. h.c. F. Porsche AG, Weissach, Germany

**Dipl.-Ing. (FH) Andreas Deimel**, Head of Design Engineering Transmissions/Powertrain Audi AG, Ingolstadt, Germany

**Dr.-Ing. Carsten Gitt**, Senior Manager Advanced Engineering Drive Units & Mechatronics, Mercedes-Benz AG, Stuttgart, Germany

**Dipl.-Ing. Thomas Landsherr**, Section Head of Driveline Components, TRATON R&D Germany GmbH, Munich, Germany

**Dr.-Ing. Jens Lüder**, Vice President Engineering, Robert Bosch GmbH, Stuttgart, Germany

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**Dr.-Ing. Florian Mulzer**, AGCO Transmission Specialist, AGCO GmbH, Marktoberdorf, Germany

**Dipl.-Ing. Thomas Pfund**, President Business Unit E-Motors, Schaeffler Automotive Buehl GmbH & Co. KG, Bühl, Germany (Chair)

**Prof. Dr.-Ing. Stephan Rinderknecht**, Professor and Head of the Institute for Mechatronic Systems in Mechanical Engineering, Technical University of Darmstadt, Germany

**Dr.-Ing. Gerd Rösel**, Head of Innovation, E-Mobility, Schaeffler Technologies AG & Co., Regensburg, Germany

**Jens Saberi, M. Sc.**, Director Advanced Engineering & E-Propulsion, Magna PT B.V. & Co. KGaA, Untergruppenbach, Germany

**Dr. Christoph Sasse**, Vice President Electrified Powertrain Technology, ZF Friedrichshafen AG, Friedrichshafen, Germany

**Prof. Dr.-Ing. Karl Viktor Schaller**, Honorary Professor, TUM School of Engineering and Design, Technical University of Munich, Garching, Germany

**Andreas Sehr**, Director Customer Engineering, Dauch, Lohmar, Germany

**Dr.-Ing. Kristin Sittig**, Head of Powertrain Module Development, Group Components, Volkswagen AG, Baunatal, Germany

### 3rd row from left to right

**Dipl.-Ing. (FH) Udo Sommerhalter, MBA**, Customer Chief Eng., Valeo Powertrain Systems Business Group, Bietigheim-Bissingen, Germany

**Prof. Dr.-Ing. Karsten Stahl**, Full Professor, Institute of Machine Elements, Director, Gear Research Center (FZG), TUM School of Engineering and Design, Technical University of Munich, Garching, Germany

**Dipl.-Ing. Patrick Vikari**, Managing Director, hofer driveTec GmbH – part of hofer powertrain company, Stuttgart, Germany

**Dr. Michael Wagner**, Vice President Engineering Drivetrain and Morse Systems, BorgWarner Drivetrain Engineering GmbH, Heidelberg, Germany

**Dipl.-Ing. Carsten Weber**, Manager, Propulsion Systems Research & Advanced Engineering, Ford Werke GmbH, Cologne, Germany


**Dr. Henning Wöhl-Bruhn**, Head of Technical Development, Inverter Electric Drives, Volkswagen AG, Wolfsburg, Germany

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## KI verstehen und anwenden – Grundlagen für Kosteneinsparung und Prozesseffizienz

 **Ihre Leitung: Dipl.-Ing. Sascha Ott**, Direktor in der Institutsleitung des IPEK – Institut für Produktentwicklung & Geschäftsführer des Zentrums Mobilitätssysteme am Karlsruher Institut für Technologie (KIT)

### Zielsetzung

Der Spezialtag vermittelt praxisnahes Wissen rund um den Einsatz Künstlicher Intelligenz im Ingenieurwesen. Teilnehmende lernen, wie KI-Methoden die Entwicklung, Produktion und Entscheidungsprozesse verbessern. Anhand von Beispielen aus Maschinenbau, Elektrotechnik und der Produktentwicklung werden konkrete KI-Werkzeuge, wie z.B. Agenten, Workflowautomatisierungen und Chat-Bots eingeführt. Chancen und Grenzen werden diskutiert und anhand konkreter Fallbeispiele gezeigt, wie man Fehler reduzieren und die Wirksamkeit des Einsatzes deutlich verbessern kann. Der souveräne Einsatz von KI setzt Kenntnisse über technische Funktionen, rechtliche und ethische Hintergründe voraus. Diese werden im Rahmen der Veranstaltung eingeführt und diskutiert. Die Teilnehmenden können eigene Fallbeispiele und Fragen im Workshop interaktiv bearbeiten.


### Inhalte des Spezialtages

- Grundlagen der KI sicher verstehen und fachlich einordnen
- KI-Werkzeuge effektiv einsetzen und eigene Lösungen weiterentwickeln
- Technische Aufgaben schneller, zuverlässiger und innovativer bearbeiten
- Praktische KI-Tools gezielt im technischen Alltag nutzen
- Daten und Modelle kritisch bewerten und projektbezogen einsetzen
- Prozesse durch intelligente Systeme effizienter gestalten
- Innovations- und Nachhaltigkeitspotenziale mit KI erschließen

Mehr Details unter: [www.vdi-wissensforum.de/01ST807026](http://www.vdi-wissensforum.de/01ST807026)



## Akustik und Schwingungen – Grundlagen und Messtechnik in Anwendung

 **Ihre Leitung: Alexander Pfaff, M. Eng.**, Geschäftsführer, HoloMetrix GmbH, Wiesbaden

### Zielsetzung

Der Spezialtag vermittelt fundierte Grundkenntnisse zu akustischen und schwingungstechnischen Zusammenhängen. Teilnehmende lernen, wie sich Signale zuverlässig erfassen, analysieren und fachgerecht bewerten lassen. Praktische Messaufbauten ermöglichen die direkte Anwendung der Theorie. Nach Abschluss können sie grundlegende NVH-Messungen durchführen und Ergebnisse sicher interpretieren.

### Inhalte des Spezialtages

- Grundlagen relevanter akustischer und schwingungstechnischer Größen
- NVH-Phänomene analysieren, Ursachen systematisch eingrenzen und daraus wirksame Verbesserungsmaßnahmen ableiten
- Einblick in relevante Normen und Richtlinien (DIN EN ISO 3744, ISO 9614)
- Messaufbau, Sensorik und Signalaufnahme sicher planen und durchführen
- Einblicke in FFT-Analysen, Modalanalyse, Schalldruck- und Intensitätsmessungen sowie Verfahren zur SchalleLeistungsbestimmung
- Durchführung praktischer Messungen mit direkter Auswertung von Luft- und Körperschall

Mehr Details unter: [www.vdi-wissensforum.de/1ST8082026](http://www.vdi-wissensforum.de/1ST8082026)



## Where ideas become Reality: The Dritev exhibition

Innovation ranging from classic drive technology to electric motors, inverters, batteries, fuel cells, and charging systems – directly in dialogue with experts.

The **Dritev exhibition** is more than just an accompanying program – it is the centerpiece and meeting hub of the event. It shows where the powertrain industry is heading and creates the **ideal environment for genuine networking and in-depth, peer level exchange.**

Around **70 national and international exhibitors** at Dritev showcase forward-looking solutions across the entire value chain of modern drivetrains – from innovative transmission and drive concepts to high-precision components, advanced materials, and efficient production and testing technologies. This makes the exhibition one of the **largest industry gatherings for powertrain in the automotive sector.**

Here innovations are not just shown on slides, they are experienced live. Discover new approaches to efficiency, electrification, sustainability, and industrial implementation. **In direct exchange with experts from industry and research, ideas evolve into concrete applications – and applications into solutions for the mobility and industry of tomorrow.**

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**Vanessa Ulbrich**

Project Consultant Exhibition & Sponsoring

Phone: +49 211 6214-918

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## The participants – Your customers

### Attendees by company type

System and component suppliers

45 %

OEMs

20 %

Plant and mechanical engineering

15 %

Engineering services

14 %

Metal processing industry

6 %

### Function

Specialists

31 %

Head of Department

28 %

Project Manager/Team Leader

18 %

CEOs/Managing Director

15 %

Others

8 %



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Curtiss-Wright Surface Technologies	HUSCO Automotive Europe GmbH	Smart Manufacturing Technology Ltd., UK
Dauch Corporation	InfiMotion Technology Europe AB	Stelter Zahnradfabrik GmbH
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ELTRO GmbH	KST-Motorenversuch GmbH & Co KG	Truck Forging GmbH
Emil Motors GmbH	Liebherr	Valeo Power
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You will find the latest list of exhibitors at [www.vdicconference.com/dritev-exhibitor](http://www.vdicconference.com/dritev-exhibitor)





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Workshop, June 29, 2026 Please choose one workshop only. Workshops will only be held in German.

<input type="checkbox"/> Workshop 1 „KI verstehen und anwenden – Grundlagen für Kosteneinsparung und Prozesseffizienz“ (01ST807026)	<input type="checkbox"/> Workshop 2 „Akustik und Schwingungen – Grundlagen und Messtechnik in Anwendung“ (01ST808026)
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**Accommodation:** A limited number of rooms have been reserved for congress participants. A reservation form can be found at [www.dritev.com](http://www.dritev.com)

**Information:** The price includes congress documents (e-book), coffee breaks, beverages during breaks, lunches and the evening reception (congress).

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