

## Topic Preview MTZ 10.2024

### COVER STORY | ELECTRIFICATION

#### Improved Lateral Dynamics for Battery-electric Vehicles

GKN presents in this article a comparative analysis of four axle torque distribution concepts commonly used in battery electric vehicles: open differentials, electrically controlled limited slip differentials, torque splitter differentials and twin-motor drivetrains. The study focuses on the performance criteria of traction, stability, and agility. Simulation studies are used to support the evaluation.

#### The New Aurobay Miller Engine

Following the success of the 145-kW Miller engine released in 2021, Aurobay has released a higher power, 184-kW Miller variant in April 2024. Continued study of the Miller engine developed an understanding of how higher power could be achieved while maintaining the fuel efficiency benefit. The result is a 184-kW 2.0-l engine that is designed for stoichiometric operation throughout the entire engine map.

Interview with Matthias Zink, CEO Automotive Technologies at Schaeffler AG and President of the European supplier association CLEPA.

### IN THE SPOTLIGHT

Hybrid Drives and PHEVs - Like a Phoenix from the Ashes?

### DEVELOPMENT | DEFOSSILIZATION

Life Cycle Assessment of Renewable Fuel and Electrified Propulsion Concepts  
Propulsion concept development and comparison must go beyond the classic tank-to-wheel considerations to capture all multi-dimensional interdependencies in the whole vehicle life. Achieving net-zero CO<sub>2</sub> emissions requires adjusting key performance indicators for powertrain development. FEV has developed a holistic and sophisticated framework for lifecycle-based concept analysis and development.

### MIXTURE FORMATION | COMBUSTION

Phenomenological Modelling Strategies for Methanol Combustion Systems  
Synthetic fuels are paving the way for climate-neutral combustion engines. IAV is transferring the combustion processes of novel fuels into its own models in order to efficiently develop the power units of the future. In this article, IAV provides an insight into the phenomenological methanol combustion model.

### Dates

Advertising deadline 08/16/2024  
Copy deadline: 08/22/2024  
Publication date: 09/13/2024

### RESEARCH | FUEL CELLS

#### Fuel-cell Electric Aircraft Powertrain

Using the Example of a Motor Glider  
The "Taifun 17 H2" project is a flagship project of the Würzburg-Schweinfurt University of Applied Sciences (THWS). The aim is to convert a conventional motor glider to a fuel cell electric drive train. This involves interdisciplinary collaboration between THWS employees and students with the aim of carrying out a maiden flight in spring 2025. The project team aims to demonstrate that CO<sub>2</sub>-free flying is already possible in the small aircraft sector.

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