

## Topic Preview ATZ 09.2022

### COVER STORY | SAFETY

#### Privacy and Limits of Interior Sensor Technology

In order to be able to offer individualized occupant safety, more and more interior sensor technology is being installed in the vehicle. This is because crash safety can only be fully exploited by recording the body characteristics, poses and state of health of the passengers. But how transparent do people become when sensitive data about them is permanently recorded and stored? IAV discusses the international privacy framework for data protection and the legal as well as radiation limits of the sensors.

#### Interview: Safe Steel Materials for the Battery

**Basjan Berkhout, Tata Steel**, talks about how crash structures of e-vehicles differ from those of conventional passenger cars and the advantages of formable high-strength steels for lightweight design and battery housings.

#### Combination of Batteries and Hydrogen Tanks in a Flexible Hybrid Storage System

Although convenient in everyday traffic, battery electric vehicles require numerous long stops for recharging when travelling long distances. This is where fuel cell passenger cars with their rapid refueling processes really come into their own. The H2Hybat hybrid storage system developed by Edag and Hexagon Purus enables fast filling, gives a free choice of energy sources and meets fire protection and crash safety regulations.

#### Guest Commentary

Wulf-Peter Schmidt, Ford

### DEVELOPMENT | THERMAL MANAGEMENT

#### Predictive Cabin Climatization for Electric Vehicles

Especially in extreme ambient temperatures, battery electric passenger cars often fail to meet customer comfort requirements, or their range is significantly reduced due to cabin climatization. As a solution, FEV and RWTH Aachen University have developed a novel model-predictive control strategy for cabin climatization that reduces energy demand and optimizes thermal comfort for occupants.

#### Thermal Management of Electrified Propulsion Systems

In the development of drives for electric passenger cars, a range of thermal effects must be taken into account, resulting from the changing ambient conditions and energy conversion processes during vehicle operation. BorgWarner uses various modeling approaches from different disciplines and combines them with a vehicle simulation at system level.

### INTERIOR

#### Electrification of Cabin Air Filtration

In megacities, the air pollution is increasing, thus the health risk is growing. The air in motor vehicle interiors is likewise often contaminated with fine dust and other hazardous substances. A novel concept from Hengst Filtration retains particles and toxic gases and is significantly more effective than previous systems through electrification, ionization and polarization.

#### Dates

**Advertising deadline:** 07/29/2022

**Copy deadline:** 08/04/2022

**Publication date:** 08/26/2022

### SIMULATION AND TESTING

#### Calibration Methodology and SiL Environment for Hybrid Powertrains

Hybrid powertrains for passenger cars are not only increasingly complex, they also present special challenges in terms of emissions and operating strategy for the electric motor, transmission and combustion engine when the exhaust gas aftertreatment system is still cold. AVL demonstrates the holistic benefits of a model-based development approach, software-in-the-loop-tools, and systems engineering for PHEV powertrain architectures.

### IN THE SPOTLIGHT

#### Faster Charging of Passenger Cars and Commercial Vehicles

Fast-charging systems shorten downtimes at charging stations and make electric mobility suitable for long-distance travel. While network expansion for passenger cars is already in full swing, work is currently proceeding at full speed on standards for megawatt charging of heavy commercial vehicles.

#### Your contact person



#### Rouwen Bastian

Sales Management

+49 (0) 611.7878 399

rouwen.bastian(at)springernature.com

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### RESEARCH | AUTOMATED DRIVING

#### **Test Methods and Systematics for Safety Verification at Urban Intersections**

The Verification, Validation, Methods (VVM) project of the EICT builds on the results of the Pegasus project and aims to develop test procedures and provide systematics to be able to perform safety verification for automated vehicles. The VVM project works on the use case of an urban intersection and focuses on driving functions up to SAE level 4 and 5.

### CONFERENCE REPORT

#### **Conference Report on chassis.tech plus (5th and 6th July 2022 in Munich)**