Preview ATZextra Electromobility 2024

CHARGING INFRASTRUCTURE

Highly efficient inductive charging system with innovative positioning system
MAHLE and SIEMENS have designed an inductive charging system for electric vehicles that meets all relevant global standards for contactless power transfer in the automotive sector and therefore ensures comprehensive interoperability with various manufacturers' equipment. The positioning system developed by MAHLE also makes it easy to use. Practical tests have confirmed the high efficiency of the system under everyday conditions.

Interview 'Two of the most promising cell chemistries are lithium iron phosphate and nickel cobalt manganese'
Chinese electric car brands are increasingly flooding international markets. We spoke with Dr Alexander Klose, Executive Vice President Overseas Operations at Aiways, about the opportunities and challenges facing Chinese manufacturers in Germany and Europe, punitive tariffs and climate policy, charging infrastructure and cell chemistry.

BATTERY

Efficient Approaches for Accelerated Battery Cell Development
The use of digital tools and simulation methods in battery cell development promises a faster market launch. This is crucial due to the rapid pace of technological progress, the high level of competition, and the strategic and political relevance of the battery market. The Technology Cluster Battery Cell by Capgemini, PEM of RWTH Aachen University and Fraunhofer FFB is developing methods for accelerated development to reduce the time from cell concept to series production by up to 50 percent.

A simulation platform to ensure reliable operation of the battery management system in electric vehicles
Due to the rise in the use of all kinds of technology in everyday life, sources of electromagnetic interference are increasing in number and intensity. Electric vehicles in particular need to be protected against the effects of this interference. Bertrandt has developed a hardware-in-the-loop test bench to validate the functioning of the battery management system of a high-voltage battery in electric vehicles. The test bench eliminates the need for cost-intensive test objects.

POWERTRAIN

Multi-System-Integration Trend in modern Drivetrain Design
The automotive industry is witnessing a significant shift towards multi-system integration in modern drivetrain design, particularly for battery-electric vehicles. With Chinese OEMs taking the lead through rapid technological advancements and shortened development cycles, the focus is on achieving vertical integration, innovation and realizing significant reduction potential. This article explores the current market trends, challenges, and the potential of multi-system integration in the automotive industry.

THERMAL MANAGEMENT

Evaporation cooling – future potentials of electric drives under new cooling conditions
The current challenges in the development of new electric traction drives lie in increasing efficiency and performance while at the same time minimizing installation space and system costs. Evaporative cooling offers an effective solution with its characteristic phase change of the cooling medium and the resulting shift in the currently known thermal limits in electric drive systems.

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