

Preview ATZelextronik 06.2024

COVER STORY | POWER ELECTRONICS

Optimising the relevant efficiency of the drivetrain

As society is increasingly moving towards a more sustainable way of life, the automotive industry must also take its approach further. Particularly with sustainability and affordability in mind, vehicles need to become more efficient while using the required raw materials sparingly. There are two possible approaches with which this so-called relevant efficiency can be increased at the powertrain level: through the use of multi-level and hybrid inverters. Infineon Technologies

Supply circuits for the on-board charger
An 11 kW totem pole demo application shows how power factor correction and inverter function can be efficiently integrated for a bidirectional power supply. The passive components of the circuit are crucial for efficiency and reliability. The detection. Laboratory measurements, based on our own experience and carried out in practice-relevant situations, serve to determine systematic limitations. Microchip Technology, Würth Elektronik

Interview: "SiC power semiconductors are increasingly taking centre stage thanks to their efficiency and potential economies of scale on the system side" In addition to technical aspects of Si, SiC and GaN as well as hybrid architectures, the interview builds a bridge to the dynamically developing market, which may be reshuffled by new players from China.

HANSEN REPORT

As a source for technology and business trends in the global automotive electronics industry, Paul Hansen highlights current industry topics within the framework of ATZelextronik resp. ATZelextronik worldwide, Paul Hansen highlights current industry topics.

GUEST COMMENT

Vincent Pluvinaige, CEO One D Battery Sciences

DEVELOPMENT | ENERGY STORAGE

State of the art of solid-state battery cells

Solid-state battery cells are being hailed as the next big leap forward in battery technology. They could significantly increase the range, fast-charging capability and safety of battery-powered electric vehicles in particular. However, not all solid-state cells are the same or fully developed. This article provides an overview of the types available, their performance and how close they are to market maturity. FEV

SOFTWARE-DEFINED VEHICLE

Rust integration based on interoperability in existing software
Conventional programming languages are reaching their limits due to increasing complexity, fast development cycles and growing quality requirements. Rust has the potential to become the leading language in modern software development. The article describes how built-in functions for software quality enable secure coding and minimise the effort required for debugging and testing. ITK Engineering

EMBEDDED SYSTEMS

Using software frameworks to develop a fully functional digital cockpit
As the automotive industry faces transformative changes such as electrification, autonomous driving, connectivity and sustainability, collaboration within the IT ecosystem is becoming increasingly important. Modern software platforms and frameworks offer the functionality to improve integration and efficiency in these IT ecosystems. The article shows how the application example of the prototype of a fully functional digital cockpit can look. Intellis

IN FOCUS

Electricity storage as a business model for charging infrastructure

The Next Mobility Hub in Passau not only offers electric charging solutions for cars and lorries: it is also designed as a grid-serving electricity storage system. Practical examples show that operating a battery power plant can already be a profitable business model and is also extremely grid-friendly thanks to local peak shaving. The article shows what opportunities this business model has through electricity trading with stored electricity from low-consumption, favourable times in conjunction with sales during high-demand, expensive phases. In short: what makes storage systems attractive for electromobility, which systems are required and what the business model looks like in detail, especially for providers of charging systems.

Dates

Advertising deadline: 05/03/2024
Copy deadline: 05/13/2024
Publication date: 06/07/2024

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