

Fuel cell system testing for future MAHLE components

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Zusammenfassung

Different technologies pave the way for CO₂ neutral powertrains for specific vehicle applications. The roadmap for future powertrains of heavy-duty truck applications is not clearly defined. Compared to passenger cars, heavy-duty trucks have a higher energy demand to cover long-haul routes and their specific driving operations. MAHLE follows the strategy for hydrogen as the appropriate use in fuel cells and combustion engines for sustainable future truck powertrains in long-haul application.

In 2021 MAHLE launched a novel hydrogen technology center at its site location in Stuttgart. Test rigs for complete fuel cell systems and combustion engines are able to provide realistic boundary conditions to improve the development for economic and robust system solutions for the automotive industry.

The MAHLE product portfolio offers a large number of innovative components for fuel cell systems. As an interface between the fuel cell stack and the drive system, MAHLE is developing a DC/DC converter for truck applications performing up to 800 A and 200 kW. For the air path MAHLEs humidifier delivers outstanding performance in water transfer for air conditioning and thus lifetime improvement of the fuel cell stack. Beside various individual component tests, with the hydrogen technology center MAHLE is able to perform near-series testing under stationary and transient operation condition to deliver comprehensive test data at an early stage in development process.