SHARED FACILITIES

Located at the **Automotive Campus** in Helmond

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AUTOMOTIVE CAMPUS

European Electric Mobility Center

The European Electric Mobility Center (EEMC) focuses on supporting developers and manufacturers of electric vehicles and components. With a wide range of facilities the EEMC provides development, engineering and testing of battery safety, vehicle performance & efficiency and battery performance. Key elements are performance and safety.

Advantages: Unique coverage of both safety and performance aspects at component, system and vehicle level.

BATTERY SAFETY

Lithium Ion batteries for application in (hybrid) electric vehicles are rapidly being improved in terms of energy and power density.

However, an increase in power or energy density often has critical effects on safety. For this reason great efforts are being put into the standardisation of requirements, and validation protocols are being developed worldwide. Battery modules are more and more constructed to be a physical part of the vehicle construction. That also has to be taken into account in relation to crash safety of the vehicle.

The EEMC presents a wide range of battery safety validation facilities, such as standardised, regulated or customer-specific safety tests on vehicles, battery modules and complete packs.

VEHICLE PERFORMANCE AND EFFICIENCY

Vehicle performance and efficiency depend on the performance and efficiency of individual component and systems.

A high-level energy and thermal management system is indispensable to obtain the required performance and efficiency at vehicle level.

The EEMC possesses a range of test facilities to verify and optimise performance and efficiency at system and vehicle level.

BATTERY PERFORMANCE

Battery performance, but also the robustness of this performance against ageing factors, is a key focal area for battery and vehicle manufacturers.

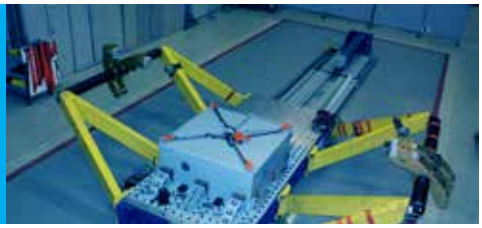
Test options include both lab testing (at battery and vehicle level) and real-life testing to monitor and characterise battery performance as a function of climatic conditions, usage and lifetime.

CLIMATIC POWERTRAIN TESTBED
- From -45°C to +55°C
- 0m > 4000 m (628 mbar)
- Max. 14 kNm torque, 650 kW power
- Suitable for trucks, buses and passenger cars
- Euro VI-compliant emission analyses
- State-of-the-art power analysers to measure powertrain electrical efficiency in real-life situations

ELECTRIC MOTOR TESTBEDS
- Max. 9000 rpm, 1000 nm, 350 kW
- 750 V, 400 A dc power supply available to power inverter
- In-house matlab Simulink-based inverter for rapid model control development

VEHICLE CRASH CENTER
- Passenger cars, buses and trucks
- Conventional, hybrid and electric vehicles
- Euro NCAP, UNECE, TRIAS, MOTC, FIA certified
- Worldwide acknowledged track record in EV crash testing

BATTERY SLED FACILITY
- Shock testing up to 60 G with a 700 kg payload
- UNECE-r100 compliant
- Customer-specific crash pulses
- Enhanced safety concept: battery is installed in a quick-release safety box



BATTERY ABUSE BUNKERS
- Capable of handling thermal runaways of
- 1000 kg batteries
- Air refreshment system for safe operation
- Examples of tests executed in this bunker: crush, penetration and fuel fire testing
- High-speed cameras and extensive data acquisition systems on-site

BATTERY CLIMATIC CHAMBER
- Size: 6m x 4m x 2,3m
- Temperature range -60 > +100 °C
- Temperature gradient: 1 – 2 K/min
- Humidity 5% > 95%
- Battery charge/discharge at max 750V / 400A
- Spacious enough for installation

tass international

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TASS International is a consolidation of five automotive companies – TASS, TTAI, TNO Homologations, EEMC and TNO Driving Guidance Lab – resulting in a single business entity that supports the transport industry developing safety systems that lead to smarter, safer and greener vehicles. The Powertrain Center offers R&D, engineering, testing and certification projects to the automotive industry in the field of (hybrid)electric mobility. Our services are supported by a unique set of test facilities that enable safety and performance testing of heavy- and light-duty vehicles, their systems and components.