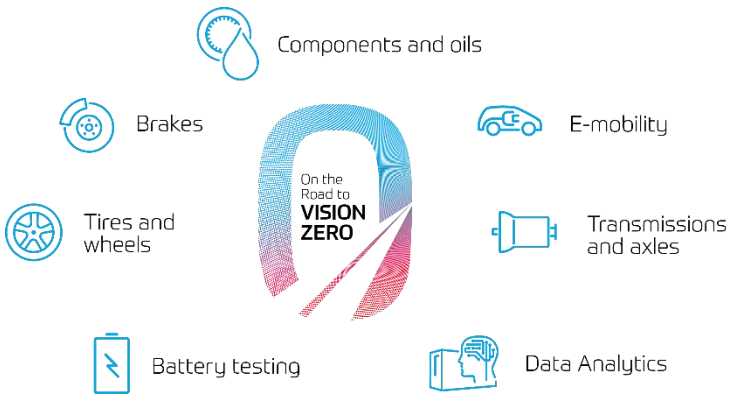
ZF Test Systems

ZF Test Systems develops, produces and retrofits test systems for on- and off-road mobility. As specialists for validation and development test facilities, we improve the quality of driveline, active chassis, tires and wheels as well as brakes and thus contribute to enhanced safety and comfort for the driver. Besides that, we offer a broad portfolio to allow service providers and OEMs worldwide to certify their batteries for a passenger EV.

For us, there is no conflict between well-proven technology and innovative solutions. Rather these are the recipe for a reliable, customized test bench technology exactly tailored to the customer's specific requirements. We see ourselves as a complete system supplier and problem solver; with the experience and creativity of our employees we understand the customer's needs and requirements and find the ideal solution together.



Driven by the force and competence of a globally active engineering group, we are developing solutions for future mobility and are prepared for the forthcoming requirements like autonomous driving and E-mobility. We recognize sustainable trends early and are providing our customers with solutions to secure competitiveness also in the future.

ESYS – Battery Testing

The ESYS family offers a broad portfolio to test all battery types – from cell, module to pack.

Our DC power electronics are based on SiC and thus increase the efficiency of ESYS and reduce the output ripple due to high switching frequencies.

The controller, specially developed for battery tests, enables tests with the highest dynamics and accuracy while complying with the charge-discharge limits of the device under test.

With the use of a ripple generator, signals with up to 15 kHz can be modulated in order to simulate inverter feedback effects, for example.

A pre-charge regime enables the current-free connection of a battery.

Additional measurement ranges for current and voltage provide more flexibility and accuracy.

The ESYS can also be used as a battery simulator for powertrain applications. Therefore, it contains several electrical battery models (e.g. R, RC).

Key Benefits

- Regenerative DC voltage sources
- SiC power electronics for efficient and compact design
- Higher power direct parallel connect-ability
- Power in the loop with Inverter/ DCU setup
- Control loop and switching frequency 400 kHz
- Ripple simulation 0.01 Hz to 15 kHz
- Turn-key battery testing solutions
  - Cell, Module, and Pack Testing
  - End-of-Line Testing
  - Lifecycle & Endurance Testing
  - Vibration Testing
  - Abuse Testing