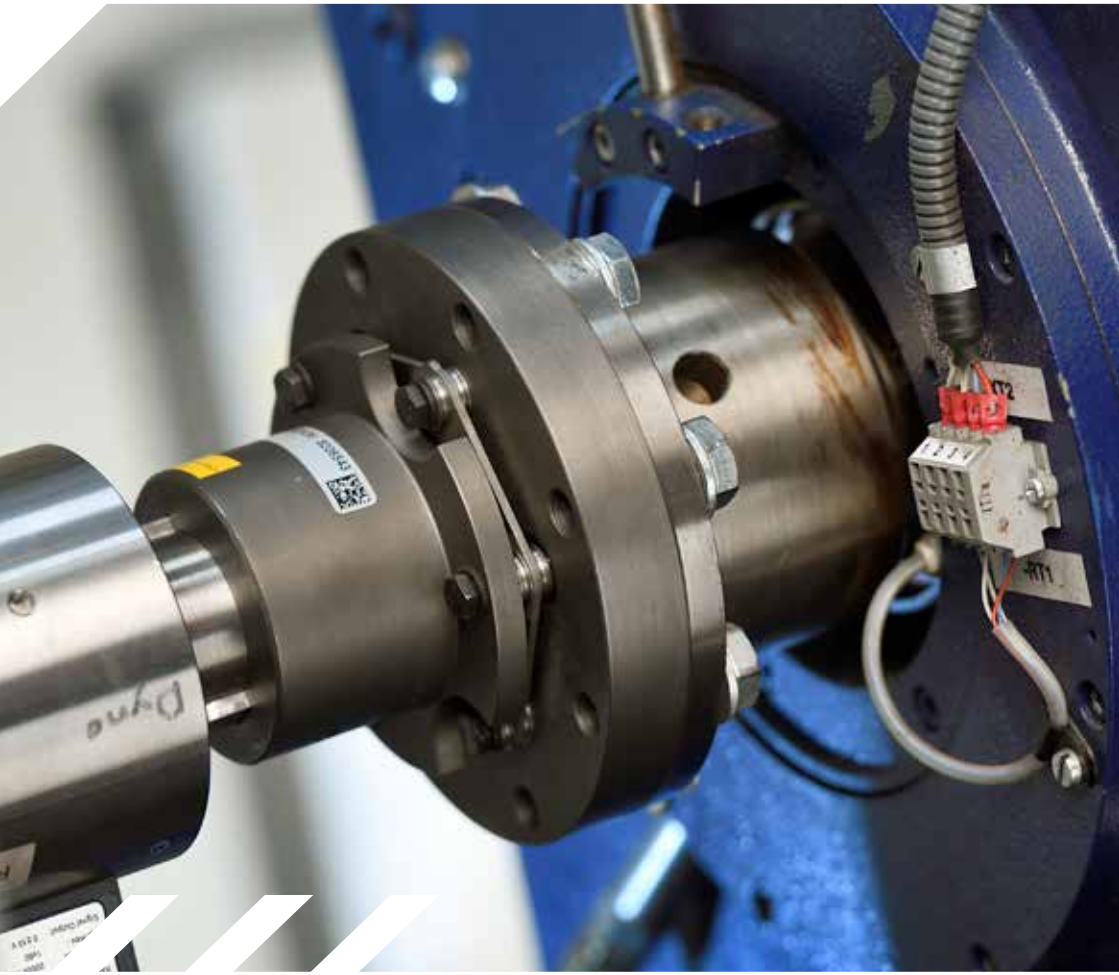
AUSTRIAN INSTITUTE OF TECHNOLOGY
TOMORROW TODAY



DRIVE TESTING LABORATORY

Testing of Electric Drivetrains and Power Electronics

ONE-STOP SOLUTIONS

The AIT Austrian Institute of Technology offers excellent research and validation infrastructure to ensure that your powertrain development process meets the market requirements. With our testbed solutions we enable you to increase quality, reduce costs and the time-to-market.

OUR SERVICES

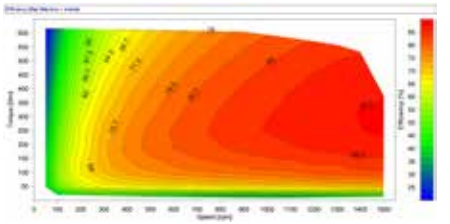
//01 HIL - HARDWARE IN THE LOOP

- Customer specific drive cycles or power cycles
- Customer specific Simulink models
- Integration of customer ECUs (Electronic Control Units)
- Testing with the real traction battery or DC-power supplies with a battery model
- Temperature- and flow-controlled cooling
- Centralized and time-synchronous datalogging

//01

//02 EFFICIENCY MAPS

- Automated measurement at system level including the data acquisition of electrical, mechanical and thermal values
- Freely definable measuring pattern
- Measurement of overload working points
- Measurement under defined thermal conditions



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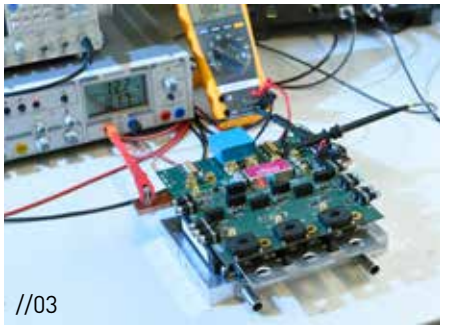
//03 POWER ELECTRONICS

- Thermal and electrical validation of semiconductor modules
- Optimization of commutation by means of own test converter
- Measurement of switching losses/conduction losses



//03

//04 TESTBENCH CONTROL

- Simulation of user-defined performance profiles and driving cycles
- Definition of semi or fully automatic test procedures

//04

SIGNIFICANTLY MORE POWER FOR YOUR SUCCESS

SPECIFICATIONS

POWER SUPPLIES

- Sinusoidal: 5 to 180 Hz, up to 5000 V, 400 kW
- Direct current: up to 1000 V, ±400 kW
- Frequency Inverter: Control of asynchronous and synchronous permanent excited electric machines up to 160 kW

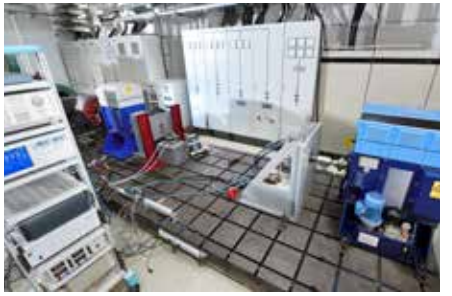
DRIVE TESTBENCHES

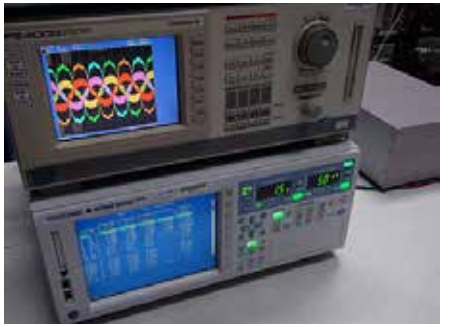
- Highly dynamic testbench 100 kW, 22000 U/min
- Highly dynamic testbench 120 kW, 8000 U/min
- Testbench 280 kW up to 3500 U/min

The highly dynamic testbenches are applicable for „Hardware-in-the-Loop"-control with a maximum scan-rate of 1 kHz.

MEASUREMENT EQUIPMENT / DATA ACQUISITION

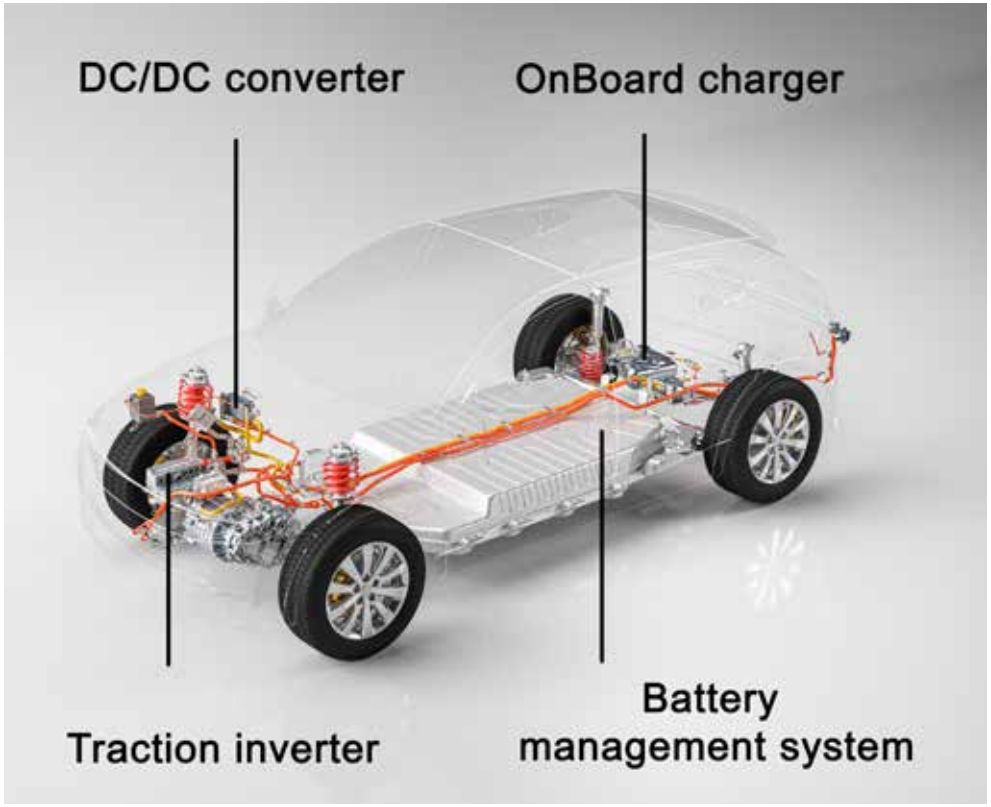
- Power analyzer for RMS values split in fundamentals and harmonics
- Voltage and current waveforms with a max. scan-rate of 5 MHz
- High precision torque sensors from 0.1Nm up to 2000 Nm, max. scan rate 10KHz
- Temperatures; thermocouples, PT100, KTY, etc.
- Implementation of customer specific sensors for various signals
- Controlled liquid cooling circuits
- Spectrum analyser for EMC pre-compliance testing





HIGHLY EFFICIENT POWER ELECTRONICS COMPONENTS

Our business is to develop, prototype and test power electronic components for transportation applications with focus on efficiency, power density, reliability and safety.

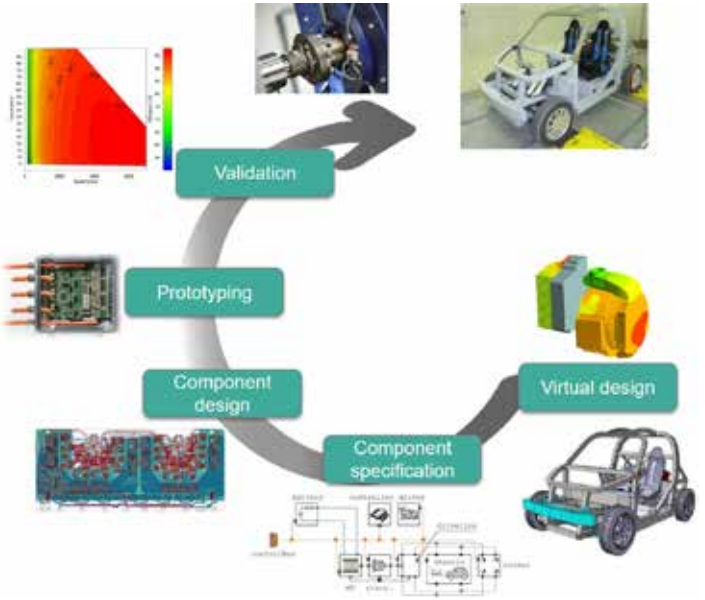


OUR CORE COMPETENCES

- Power electronic hardware design
- Highly efficient control algorithms
- Thermal and electrical systems simulations
- Vehicle control unit programming
- Inverter and electric machine testing
- Electric drivetrain technical matching of all components
- HMI programming
- Vehicle integration and prototyping

OUR SERVICES

- Hardware and software development of power electronic components
- Testing and validation of power electronics and electric machines
- Thermal, electrical and mechanical characterisation of components
- Component and vehicle prototyping
- Power electronics design review and consulting



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