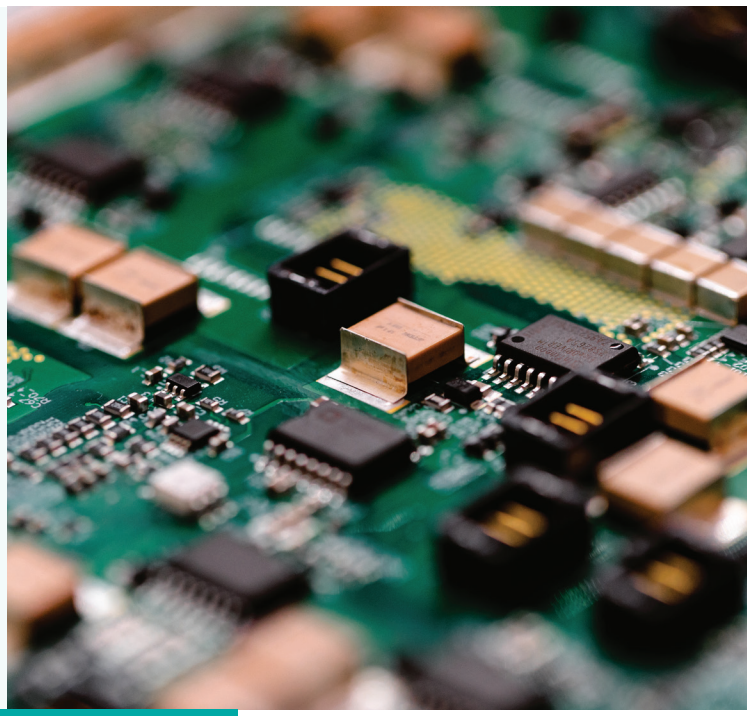
SAL
SILICON AUSTRIA LABS

# Power Electronics

***Smart electronic devices for future products & applications.***

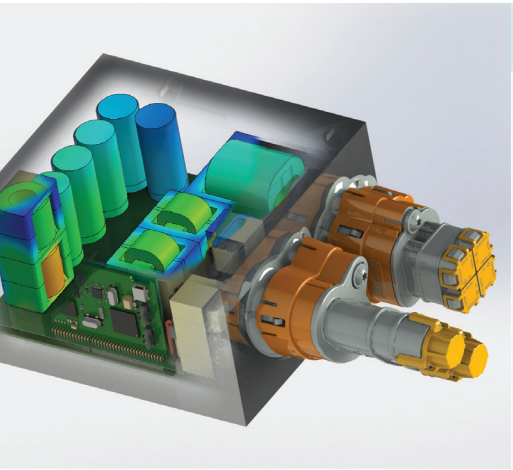
Power electronics are at the heart of the development towards ecologically compatible mobility and energy-efficient digitalization. Invisible from the outside, it is hidden in almost every electronics-based system - be it within e-mobility, used for renewable energy or in power supplies for IT and communication applications. To meet the growing demands on electronic components and the need for high performance and reliable integrated power supply, the SAL team is working on power electronics systems along the entire EBS value chain. Starting from the design and characterization of components up to the complete system design of power electronics including the control software.



***"Power electronics are the backbone of digitalization. Unseen, but embedded in almost every electronic system. We contribute to this transformation with our services in design, prototyping and characterization with our key expertise and state of the art labs."***

*Alfred Binder, Head of Division Power Electronics*

# *Our Service Portfolio:*



## Design & Simulation

- Simulation and Optimization of Power Electronics Systems and Pareto Front optimization by Multidomain coupling
- Rapid System Prototyping (software, electrical & mechanical)
- 3D EM & PCB EM Simulations, Signal & Power Integrity Simulations
- Accurate electrical and thermal modelling of active and passive components for EMC and power simulations.
- E/MCAD System Co-Design process for cooling system/mechanical integration and simulation

**SOFTWARE - Commercial licenses and experts available:**

- Ansys Maxwell
- Ansys HFSS
- Ansys Q3D
- MATLAB
- PLECS
- Keysight Pathwave ADS
- Solidworks CAD
- Altium Designer
- SALamander Circuits


## Measurement, Characterization & Testing

- High power prototype system testing facilities
- Thermal and electrical characterization of power components & modules
- High precision impedance measurements including biasing
- Advanced probing of voltages and currents
- RF signal generation
- Spectral measurements and EMI analysis
- Emission measurements with GTEM cell
- De-embedding of measurement fixtures
- Time Domain Reflectometry measurements

## Key Equipment

- Precision AC/DC supplies & Sourcemeters
- Grid simulator
- Arbitrary Waveform Function Generators
- Vector Network Analyzer
- High precision Impedance Analyzer
- GTEM cell and crawford TEM cell
- High Power Amplifiers
- RF Signal Generator (IQ Modulation, WLAN signals, etc.)
- EMI Receiver
- Rapid Control Prototyping System
- High power loads for AC/DC applications
- Probes: current, differential, active, optical isolated probes
- Test fixtures for component and magnetic material characterization
- 3D Profilometer and Microscopic measurement systems
- Curve Tracer
- Fast in-house PCB Prototyping (vapor phase solder, semi-manual SMT assembly & rework station)

## ABOUT SAL

Silicon Austria Labs (SAL) is a top European research center for electronic based systems (EBS). The application-oriented center offers cooperative research & services at three locations – Graz, Linz and Villach – in the pioneering research areas of Sensor Systems, Microsystems, Intelligent Wireless Systems, Power Electronics and Embedded Systems.

## CONTACT

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