TECHNISCHE HOCHSCHULE NÜRNBERG

UNIVERSITY OF APPLIED SCIENCES NUREMBERG, GEORG SIMON OHM

The Institute of Power Electronic Systems ELSYS at the University of applied Sciences Nuremberg, Georg Simon Ohm is headed by Prof. Norbert Grass and Prof. Armin Dietz and has about 20 employees. The Institute works in cooperative research and development projects with industrial partners. Main areas of work are **pow**er electronic systems up to 300 kVA, control and diagnostics and interfacing power electronic systems to information technology. With high efficiency and power management as well as power quality analysis ELSYS contributes to energy conservation and against global warming by means of power electronics. Students are involved in research projects, thus they are practically trained to work in industrial research projects.

Key Research Fields & Competence Areas

Platform Technology for Power Electronic Systems

- Power platforms up to 200 kVA, 1000 A
- Control platforms based on microcontrollers, DSPs and FPGA
- Object Oriented Control Framework for DSP
- Data communication modules



Power Electronics in the Loop and Drive-Test-Systems

- Electronic loads up to 200 kVA
- Dynamic load emulation
- Drive test benches up to 100 kW

Drive Systems, Smart Grids and E-Mobility

- Grid control and interfacing of vehicles
- Power quality issues
- High Efficiency Drives

Institute Highlights, Examples, Equipment

- High efficient electrical drives
- Control of Reactive Power and Harmonics in a real existing LV grid with integrated data communication
- Power electronic control and driver concepts
- Model based software development
- Texas Instruments DSP platform
- Infineon XC 167 and XC2000 platform
- Xilinx FPGA platform
- Equipment for power quality analysis
- IR camera for thermal design verification