

The Institute of Electronic Systems ELSYS at the Georg-Simon-Ohm University in Nurnberg is headed by Prof. Norbert Grass (since 2006) and Prof. Armin Dietz (since 2008) and has about 10 employees. The Institute works in cooperative research and development projects with industrial partners. Main areas of work are **power 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

Rapid Prototyping for Power Electronic Systems

Development of prototypes based on converter and control platforms.

Hardware In The Loop (HIL)

- ✚ Control of power electronic systems by real time simulation systems
- ✚ dSpace and National Instruments

Microcontroller and FPGA boards

- ✚ Infineon, Microchip, Xilinx
- ✚ Graphical User Interface, USB, Ethernet, WLAN..

Power Quality Analysis

- ✚ Signal processing and data acquisition
- ✚ Algorithm development and implementation

Institute Highlights, Examples

- ✚ High efficiency solar battery charger
- ✚ IGBT inverter platforms up to 200 kVA.
- ✚ Industrial Power Quality Analysis System
- ✚ Mobile Impedance Measuring Device for Power Grids
- ✚ Real Time Simulation of a Wind Energy Park
- ✚ High Voltage Generation Systems
- ✚ Model Based Software Development with UML
- ✚ Limitation, Compensation and Control of Reactive Power and Harmonics
- ✚ Power Electronic Control and Driver Concepts
- ✚ Electrical Drives
- ✚ Renewable Energy Sources and Conversion

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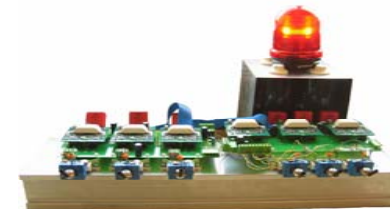
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