

The Faculty of Mechatronics and Electrical Engineering at Esslingen University of Applied Sciences currently comprises 24 full-time professors and about 800 students who are mainly working in the field of mechatronic systems. The mechatronic approach of the faculty is focused on combining and integrating several scientific and technical disciplines in the design process of a complex system, containing mechanical and electronic components as well as computer technology and software. To realize such an overall approach, expertise on system level is required as well as detailed knowledge in several fields of engineering sciences. Hence, besides of control techniques, communications, and manufacturing technology, power electronics plays an important role in the design of modern mechatronic systems.

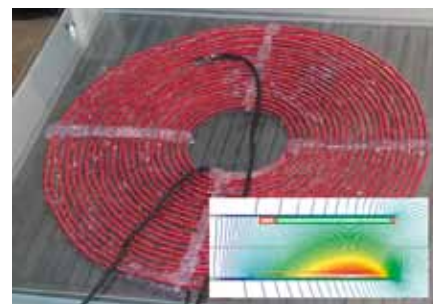


To achieve the required key performance indicators, a multidisciplinary approach is used, not only taking into account the basic functional aspects, but also covering additional requirements and quality parameters such as electromagnetic compatibility (EMC), acoustics, or construction dependent component placement during all phases of the developing process. This approach aims to tear down the barriers historically grown between several subjects of engineering sciences. In this way, the overall performance of a system can be optimized, rather than having optimal partial solutions.

Examples of successfully realized projects are a wireless power transmission for EV-charging stations, or the setup of a completely self-designed wind energy plant for small scale and home applications.

To achieve its research assignment, the lab Machines and Drives has numerous resources available. Besides of the professors and the technical staff members lo-

cated in the lab and its several sub-labs (e.g. high voltage lab, EMC lab, or electrical drives lab) a photovoltaic test field is available on the campus in Göppingen. Unlike other photovoltaic power plants, this test field is not operated in a commercial environment, and hence allows performing research projects without limitations due to financial interests.



Besides of applied research, the main task of the Faculty is education and training of highly qualified junior employees for industry. To achieve this goal, different study programs are offered. Besides of the classical full time study program, cooperative study programs and also part time study programs are offered for both, undergraduate and graduate students. Moreover, doctoral programs are also possible in cooperation with other Universities. The excellent ranking of the Faculty of Mechatronics and Electrical Engineering indicates the high level of education which is offered by the Esslingen University of Applied Sciences in general and at the site in Göppingen in particular.



The laboratory Machines and Drives, led by Prof. M. Neuburger, is basically responsible for drive trains. Main tasks are designing and validating electrical energy converters and electrical machines, including different types of electrical drives.