

Responsible: Prof. Dr.-Ing. Thomas Leibfried
Prof. Dr.-Ing. Marc Hiller

Program consultant: Dr.-Ing. Bernd Hoferer

Language
English

Institutes
Institut für Elektroenergiesysteme und Hochspannungstechnik (IEH)
Elektrotechnisches Institut (ETI)

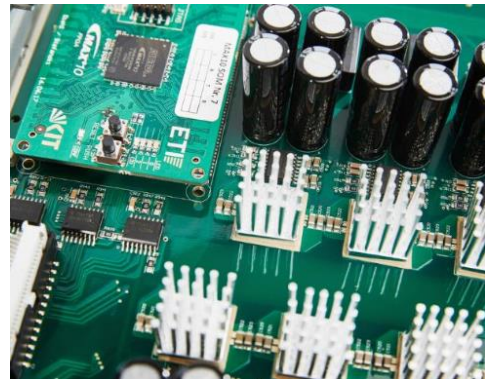
In a nutshell

A reduction of CO₂ emissions is essential for future life on earth. This goal can be achieved by a 100 % utilization of renewables. However, this requires developing and establishing a completely new power supply system. This new energy system comprises all energy sectors: electrical power, gas and heat. Intelligent (smart) systems are used to combine these energy systems together with new equipment like conversion units (CHP's, Fuel cells, ...) and storage systems (Batteries, Gas storage,...) and efficient transmission technologies (superconducting grid equipment).

Fields of application

Electric Power Systems“ covers a wide range of topics within power engineering by combining grid aspects, power electronics, control and special power applications like superconducting and pulse power. Thus, a broad range of applications are opened:

- Power engineering at grid system operators and power industry
- Renewable power systems
- Pulse power applications
- Superconducting systems



Graduates in „Electric Power Systems“ will find attractive positions in research and development, project engineering, production and technical marketing in international medium and large enterprises as well as in service enterprises. Due to the enormous challenge in solving the climate problem, a sustainable need for excellent power engineers can be expected – now and in future.

Content and background

Basic courses provide knowledge such as optimization as well as systems and software engineering.

The compulsory part of the specialization provides knowledge in all relevant fields of electrical energy engineering such as power electronics, power transmission and grid control but also energy market aspects and technologies like superconducting systems. The laboratory „Modern Software Tools in Power Engineering“ gives insights in software tools like DigSilent of Power factory, MATLAB Simulink and electromagnetic field calculation using COMSOL.

Elective courses could go deeper into power engineering or in economical aspects. It is also possible to supplement courses of adjacent disciplines like mechanical engineering.

This specialization focuses on a broad understanding of the power system rather than deep knowledge in individual fields in combination with knowledge in energy economics.

