

The Industrial Electronics Lab (LEI) focuses its research activities along three principal axes. The first concerns power electronics, with the development of new converter structures or topologies, or dedicated to special applications as multi-level converters based on MF transformation. The second axis concerns energy conversion in general, with its management and storage. Flexibility and rapid intervention are the main contribution of power electronics in this field which are particularly pertaining to renewable energies. The third axis concerns the modelling and simulation of systems, as well as the concept and design of control strategies and control circuits. The Industrial electronics lab is headed since 1997 by Prof. A. Rufer

Key Research Fields & Competence Areas:

- ∅ Power Electronics
Multilevel converters, DC/AC, DC/DC, High-efficiency converters MF based insulation converters
- ∅ Energy conversion and storage
Applications with supercapacitors, Compressed Air Energy Storage, VRF Batteries, etc.
- ∅ Modelling, simulation and control
Control strategies, Macroscopic energetic representation, Hybrid systems, Multiphysical approaches

Institute Highlights:

- ∅ Power electronics lab
- ∅ Test fields for drives
- ∅ Simulation tools for power electronics and applications
- ∅ Workshop for prototypes

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