Instrumentation and Industrial Electronics Laboratory (LEII)

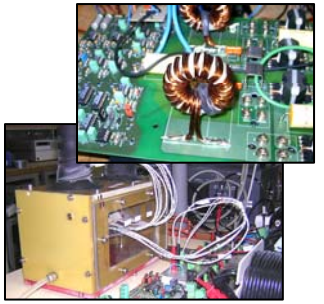
Power Electronics Division
University of Valencia

The Instrumentation and Industrial Electronic Laboratory (LEII) is headed since 1989 by Prof. Dr. Enrique J. Dede. With its 16 staff members the group has two divisions: Power Electronics Division and Electronic Instrumentation Division. The Power Electronics Division is responsible for power electronics education at the University of Valencia and carries out government and industry projects. Research activities cover various areas related with high-efficiency power converters: aerospace power systems, high power resonant converters, advanced control techniques and power devices characterizations.

Key Research Fields & Competence Areas:

- **Aerospace Power Converters**
  Battery charge/discharge Regulators, Solar Array Regulators, Power Supplies.
- **High Power Resonant Converters**
  Industrial Induction Heating, High Voltage applications
- **Advanced Control Techniques**
  Non-linear Control and Vectorial Control (DSP) focused on renewable applications
- **Power Electronic Devices**
  Static, dynamic and thermal characterization of passive and active devices (Si, SiC)

Institute Highlights:

- **Powerful Lab-facilities**
  Gain-phase and impedance analyzers, 1ph and 3ph AC and DC power sources, Dynamic Power loads, EMI Test tools, Climatic Chamber, Electronic Simulation Tools.
- **Power Semiconductor Test-Bench**
  Large temperature range (-170ºC to 400ºC), high voltage and high current setup.

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