

The Fraunhofer Institute for Solar Energy Systems ISE conducts research on the technology needed to supply energy efficiently and on an environmentally sound basis in industrialised, threshold and developing countries. To this purpose, the Institute develops systems, components, materials and processes in the areas of the thermal use of solar energy, solar building, solar cells, electrical power supplies, chemical energy conversion, energy storage and the rational use of energy.

Key Research Fields & Competence Areas of the Power Electronics Group:

- **Power Electronics**
Charge controllers, DC/DC Converters and Inverters for PV, Fuel Cells, Wind and Water turbines, combustion engines ...
- **Control Systems**
Design and simulation of control systems, feedback control, fully digital control by DSPs, Maximum Power Point Tracking
- **Simulation**
Electric simulation, thermal simulation, system simulation
- **Characterisation**
Measurement of efficiency, EMC behaviour, MPP-Tracking

Institute Highlights:

- **Power Electronics Laboratory**
Development and test of DC/DC Converters and Inverters
- **Test Centre for Photovoltaics**
Certified tests of PV modules and cells
- **Test Centre for Solar Thermal Systems**
Certified tests of Solar Collectors, Heat Storage and Systems
- **Photovoltaic Technology Evaluations Center PV-TEC**
Clean room and equipment for mass production of solar cells

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