

Bavarian Ministry of Economic Affairs, Regional Development and Energy

Home
Cluster
[Power electronics](#)

POWER ELECTRONICS

[Cluster A-Z](#)

Controlling power flow with highest energy-efficiency

The role of power electronics is the conversion of one form of electrical energy into another form needed for a specific application as efficiently as possible, as well as the control of the power flow. Thus it is a key technology for growth industries in the areas of mechanical engineering, electrical engineering, and the automotive sector. Approximately 545 companies and institutes with roughly 110,000 jobs in Bavaria are directly involved in research and development, production, sales, and services in the field of power electronics. The Cluster Power Electronics within the ECPE e. V. organizes specialist events, initiates and accompanies cooperation and research projects, sponsors joint trade fair participation, and executes qualification measures, as well as recruitment measures for secondary education students, teachers, and university students.

Focus Areas

- Power semiconductor devices (Si, SiC, GaN)
- Passive devices (inductors, capacitors, substrates)
- Circuit and control concepts
- Packaging and interconnection technology, new materials
- System integration, miniaturization
- Thermal management, reliability, and EMC
- Development tools, design, and simulation
- Test and measurement techniques
- Production technologies, Industry 4.0

Key Applications

- Intelligent power supplies with extended functionalities
- Energy-efficient systems, power management
- Electrical drives (industrial drives, railway traction)
- Automation technology and robotics
- Electromobility

Cluster A-Z

[Back to the cluster overview](#)

[Contact Cluster](#)



European Center for Power Electronics ECPE e.V.

Landgrabenstraße 94
90443 Nürnberg
Germany

Tel: +49 911 8102-880
Fax: +49 911 8102-8828

E-Mail: thomas.harder@ecpe.org
Internet: www.clusterle.de

- Grid integration of renewable energies
- Electrical transmission and distributed networks (smart grids with storage integration)



Prof. Dr. Leo Lorenz
Cluster Spokesman



Thomas Harder
Cluster Managing Director

Similar Clusters

Information & communication technology|
Mechatronics & automation|
Sensor technology|