

ABB CORPORATE RESEARCH



ABB is a global leader in power and automation technologies that enable utility and industry customers to improve their performance while minimizing environmental impact. The company seeks to improve performance, drive innovation, and attract talent, while always acting responsibly. With a presence in more than 100 countries, the ABB Group of companies employs over 140,000 people. The business is organized in four divisions: Power Grids, Electrification Products, Discrete Automation & Motion and Process Automation.



ABB Corporate Research is a global organization employing approx. 850 research engineers. At each of its seven research centers around the world, scientists are working hard toward novel technological

achievements that will help strengthen the four ABB Group divisions. In line with ABB's mission to drive innovation, the mission of ABB Corporate Research is to maintain and strengthen the company's position as a technology innovation leader. ABB Corporate Research drives solution-oriented projects, facilitates recruitment of talent researchers, and serves as the primary interface for university collaborations and publicly funded projects. In Europe, ABB Corporate Research Centers are located in Baden-Dättwil (Switzerland), Västerås (Sweden), Ladenburg (Germany) and Krakow (Poland).



At the Corporate Research organization the power electronics research starts with the semiconductor: devices are designed and fabricated in a cleanroom facility, dies are packed and integrated into larger assemblies, where the devices are arranged in circuits with optimized topologies. From semiconductors to power electronics hardware and system aspects, the research covers the full spectrum. Application oriented power electronics research ranges from Power



Supplies, Low Voltage and Medium Voltage Grids, UPS, PV Inverters and Energy Storage, Vehicle Charging, Drives and Wind converters, Traction Drives, Motion Control and Robotics, FACTS, Grid Interties, Energy Storage Systems and HVDC. The Corporate Research Center closely cooperates with the R&D centers of the ABB power electronics business units and the ABB Semiconductor factories.

Highlights Power Electronics Research at ABB:

- Semiconductor technologies, e.g. wide bandgap high power semiconductors.
- Power module technology development for industrial, traction and HVDC applications.
- Next Generation Power Electronics Building Block (PEBB) developments for multiple applications
- Power electronics multilevel topology developments, e.g. ANPC MV Drive or MMC HVDC technology, and its related control
- Integration of new technologies and development of new applications
- Research activities in magnetics, EMI and cooling of power electronics systems.