



**Eaton has an opening for a:**

## **Senior Engineer - Power Conversion**

**Location: Bonn or Aachen, Germany**

### **About the research and the project:**

As a power management company, Eaton is focusing on new technologies and devices needed to enable the transition to a low carbon economy. The variability of renewable power sources and the need for transport electrification are triggering development projects in many companies.

The Power Electronics team, as part of Eaton Research Labs (ERL), is focused on DC Power Systems for various applications: residential, commercial, transport electrification. We are focusing on microgrids that integrate distributed energy sources (DER), including renewables, batteries, generators.

We have an exciting and rewarding position of a Lead Engineer in Power Conversion to support research and development in emerging technology programs. The job function includes developing and testing innovative power conversion technologies and identifying market opportunities for the new technologies, support businesses to evaluate market studies and develop business cases. The individual will also evaluate internal and external funding resource, support discussions with national labs and university leaders to be on top of the key technologies identified.

You will be part of a future ERL team in Bonn, focusing on Power Electronics and Energy Systems solutions for European and world-wide customers.

As a Lead Engineer-Power Electronics, you will contribute to a project on modeling and simulation of DC power systems, as part of a research consortium within the Flexible Electrical Networks Research Campus in Aachen ([www.FENaachen.net](http://www.FENaachen.net)).

You will be based in Bonn, reporting to the ERL Team Manager, but you will be an integral part of the Eaton Research Lab team in Europe, with functional coordination from Eaton European Innovation Center in Prague, and from ERL leadership in US.

## Primary function:

Create emerging power system solutions (DC and mixed AC-DC), including power conversion, protection and control components, based on breakthrough technologies, for residential, industrial, automotive, truck, and aerospace applications.

Pursue external collaboration within European and national funded projects, present ideas and projects to Eaton business leaders and ERL leadership.

## Further goals/responsibilities for this role are:

- Lead external partnerships with universities and research organizations to bring new technologies and best practices to Eaton.
- Lead government funding proposals and execute joint projects.
- Design, develop and test power electronics platforms and systems for power conversion and distribution applications in hybrid and electric vehicles, in multi-disciplinary and multi-cultural, globally distributed teams.
- Interface with Business Unit (BU) engineers and Research Labs scientists to drive strong business cases for new commercial applications.
- Lead/participate actively in industry and technical groups, mentoring junior level staff and consulting internal business and engineering partners.
- Position requires up to 20% travel, domestic and international.

## We would like you to bring:

- A degree in Electrical Engineering, from an accredited university (PhD welcome)
- Related senior engineering experience in power electronics designs and product development
- Experience in low and medium voltage power conversion and power systems engineering, including creating specifications, defining application space, designing technical solution concepts, and building and testing prototypes to validate models/hypotheses and documenting results.
- Expertise in the following areas: power converter topologies (DC converters, motor drive technology, high-power electronics; electric machines and controls; electrification of transport, energy storage, and grid connected converters; alternative power generation and distribution).
- Experience in modeling power converters and power systems using simulation tools (example: MATLAB/Simulink, PSPICE, Altium Designer, PLECS, PSCAD).
- Fluent German

## What skills would be evaluated:

- Experience in power electronics electromechanical packaging techniques; understanding of the effects of parasitic capacitance/inductance on circuit performance, familiarity with techniques for the minimization and/or control of parasitic effects, familiarity with voltage creepage and clearance

requirements and various insulation and interconnection techniques; familiarity with various power electronic component cooling techniques, etc.

- Experience with real time simulators such as OPAL-RT and/or RTDS

### **What we can offer to you:**

- Learning & Development - we invest in our employees for the long term – not just with salary and benefits but with ongoing learning and development opportunities made available through Eaton University
- Unique career development in new product development in power electronic sectors in collaboration with Eaton's European Innovation Center in Prague and other international Eaton locations
- Team of professionals, opportunity to learn new technologies.

### **About Eaton:**

We are a power management company made up of over 92,000 employees, doing business in more than 175 countries. Our energy-efficient products and services help our customers effectively manage electrical, hydraulic and mechanical power more reliably, efficiently, safely and sustainably. By giving people tools to use power more efficiently. Helping companies do business more sustainably. And by encouraging each and every employee at Eaton to think differently about our business, our communities and the positive impact we can have on the world.

### **Please contact:**

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