

Hardware Power Electronic (PhD_) Engineer

München, Unterföhring

For our international development team in Munich, we are looking for a **Fulltime- Hardware Power Electronic (PhD_) Engineer**

Join us and take part to the development of innovative mechatronic systems for electromobility in the field of automotive and truck industries.

Our development office is located in the heart of the automotive development. With a close link to our customers, OEMs and Tiers1, we develop next generation electromobility applications, aiming to be part of the Total Net Zero emission transition for a better and more sustainable future.

Compact Power Motion (CPM) GmbH, part of Sonceboz Group (HQ based in CH, 1200 employees, 60Mpcs manufactured a year. www.sonceboz.com), relies on its agile creative team to develop first concept, theoretical studies and self-made prototypes. Our main competences are the mechatronic development, software, motor control, electric motor, power electronic and mechanic.

We reinforce our simulations & development capabilities in the field of power electronic, and we need an hardware power electronic PhD and/or Engineer.

Study: Power Engineering, Electrotechnic

Mission:

- Provide ideas and concept to feed innovation within Sonceboz group which could be turned later into patent.
Propose optimized (and innovative) HW realisation modes. Be capable to size it to its optimum.
- In collaboration with the software, electric machine and mechanical engineers, design and optimize power electronic converters according to customers requests.
- Participate to technological innovation of power mechatronic systems, for both
 - high DC bus voltage (up to 850VDC) and high power (up to 40kVA)
 - low DC bus voltage (below 60VDC) and high currents ($i < 600A$);
- Develop HW topologies which provides best technical vs. economical trade-off possible to customer challenges; from proof of concept phase to mass production design.
- Good knowledge about components and suppliers on the electronic market.
- Run tests in our lab to validate simulations models; check prototypes performances; identify potential limitation and improvements.
- Analyze and benchmark systems from the competition
- Bring necessary support to business acquisition, before and/or after the sale, for and/or at the customer.
- *Endorse responsibility of electrically skilled persons (ESP)*

Know-How:

- Wide knowledge about analog and digital circuits
- Good knowledge about power electronics:
 - o Architectures and topologies (Inverter, DC/DC Converter...)
 - o Power semiconductors (MOSFET, IGBT, WBG)
 - o High current switching
 - o High voltage (up to 1000V) systems, regulations and safety
- Knowledge about modelisation means such as Spice, Matlab/Simulink, FEM, PEEC....
- Knowledge about EMC/EMI

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NICE TO HAVE

- System understanding (control, motor, thermal);
- Knowledge about:
 - o PCB technologies and PCB assembly
 - o PCB substrates (High Temperature, high voltage, IMS, DCB..)
 - o Embedded systems and microcontroller
 - o Mechatronic systems

We offer

- Interesting and innovative projects in the automotive field
- Strong link with a manufacturing group which targets to bring our innovation into mass production
- Space to express ist creativity with prototyping capacity
- Modern, light and spacious offices
- Good loan, with flexible working hours, holidays and bonus system according to salary scale
- Harmonious, Family spirit Team
- Based in Munich Unterföhring at the north of the Englishergarten
- And for a better integration: Support for relocation in Munich from abroad and German language lessons