

We are looking for a

Bachelor/ Master Project – BMS onboard EIS (f/m/d)

About Munich Electrification

Munich Electrification is an innovative company founded with the aim of accelerating the transition to electric mobility. We develop innovative battery management systems for electric vehicles for our global customers. Our international team is composed of highly motivated, exceptional young engineers. We offer a relaxed and friendly work atmosphere with flat hierarchies. As a small and specialized team, we are well-aware of the importance of each individual colleague and support and promote each employee according to their abilities and needs. Our office with adjacent prototype and testing lab is located in the heart of Munich at the Heimeranplatz.



Your Role

We are looking for a highly motivated Bachelor or Master student to support us in the development of our innovative BMS (battery management systems). You will be responsible for your own prototype development project in hardware and software with the support of our engineering teams.

Your Responsibilities

- The goal of the project is to develop a proof of concept of a novel on-board Electrochemical Impedance Spectroscopy method in hardware and software using rapid prototyping techniques. The intention is to propose a low-cost technical solution that integrates with existing state of the art automotive BMS solutions.
- The first project milestone is to build a prototype circuit including software. That circuit shall generate a sinusoidal current signal on a 60V battery cell stack. Software shall control the sinusoidal discharge current.
- The second project milestone is to add SW to the microcontroller which can interface over SPI to an existing cell voltage measurement hardware (CMB). That SW is tested using a lithium ion battery cell stack.
- The third project milestone is to integrate the software for generation of the sinusoidal discharge current signal and cell voltage measurement.
- The final milestone is to test the hardware and software with a lithium ion battery cell stack and prove that with the sinusoidal test current and the voltage measurements taken, an electrochemical impedance spectroscopy can be performed. A bode-plot shall be generated with the measurements taken from the system.

Your Profile

- Bachelor or master student in electrical engineering, mechatronics, physics or similar engineering field
- Good understanding of batteries and battery cells
- Basic programming skills in C/C++, Python, experience with Arduino or similar systems
- Highly motivated, willing to take responsibility and ownership of a project
- Creativity, curiosity and enthusiasm for innovative electronics solutions for electric vehicles
- Preference for working in teams and strong communication skills (English and German mandatory)

Our Offer

- The chance to be part of a highly innovative, agile, and unique team with the most prestigious customers in the automotive sector
- A deeper knowledge around electric vehicle batteries, battery management systems and electronics development
- Healthy lunch and fresh snacks everyday
- An exciting working environment and various inspiring team events

Ready for a new challenge?

We are looking forward to your application!

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