

## **Hardware / System Engineer (Junior to Mid-Level)**

Are you interested in working for an innovative and growing business?

Are you interested in developing lithium-ion batteries for different applications?

Then we are looking for you.

### **Cleantron**

Cleantron develops and produces lithium batteries close to Amsterdam in Nieuw-Vennep. Cleantron batteries are used in a variety of markets, at home and abroad. Think of electric vehicles such as Light Electric Vehicles, Automatic Guided Vehicles (AGV's) and Construction Equipment. Good battery design is very important for manufacturability, safety and battery life. Cleantron is developing batteries for new applications where these aspects are key. Also a good integration of the battery in the application of the Customer is very important. Cleantron therefore supports its customer in integrated the battery into the system. This integration is normally focusing on communication with the charger and the driveline of the vehicle. Allowing the battery to control the vehicle if needed.

We put the quality of our products centrally and to guarantee this, we continuously work on improving our product designs, development and production processes.

The embedded Battery Management System (BMS), together with the Lithium-ion Cells, form the heart of a Cleantron Battery and guarantees the safety and service life of the Battery. The BMS ensures, among other things, protection against many extreme conditions (over-voltage, under-voltage, over-current, etc.). In addition, various important data for the customer are collected and calculated, such as the "State of Charge" and the condition of the battery. Finally, based on customer-specific protocols and interfaces, the BMS provides communication between the battery and the battery application. This often must be coordinated with the motor controller or VCU of the vehicle or application so that in an extreme condition (for the battery) the vehicle stops safely or that in an imminent extreme condition the motor controller regulates back in time to prevent the battery from switching off.

### **Tasks Hardware / System Engineer**

- The Engineer works on the BMS Hardware design or parts thereof. He or she works closely in a team to ensure alignment with the final application. The Engineer is also closely involved in setting up the validation and will be working in accordance with the V-model.
- The Hardware - Firmware engineer is part of the electrical teams that consists of Junior and Senior Hardware, Firmware and Test engineers. You will be working in cross-functional products developments teams that also include other disciplines like Mechanical Engineers and Production Engineering.
- The Team consists out of hardware and software engineers. In addition, Cleantron works together with Universities, Colleges and several engineering partners. An objective-oriented work attitude and team spirit are therefore important.

### **Education**

- Bachelor or Master in Electrical Engineering, with a specialization in Hardware development

## Relevant skills

- Experience in hardware and power electronics
- Experience in system integration
- A good understanding of Firmware in C
- Experience in Python is a benefit
- An understanding of Functional Safety (ISO 26262 or ISO 61508 or ISO 13849) is a benefit
- Experience with validation of Embedded Systems
- Experience in Altium
- Able to make and record structured problem analysis
- You master the English language

## We offer

- Dynamic international working environment in an innovative and growing company, with an enthusiastic team and room for personal input. We also offer room for further development of your skills (on the job or by offering specific training).
- Full-time appointment (38 hours), however part-time is also negotiable.
- A competitive salary (€2,900 to €3,900,- depending on your background, education and experience.)
- Personal training options.
- Flexible working hours are possible.
- Fresh fruit.

## Interested?

If you recognize yourself in the profile above, apply by sending your CV and motivation letter to [hr@cleantron.nl](mailto:hr@cleantron.nl). More information about Cleantron can be found at [www.cleantron.nl](http://www.cleantron.nl).