Electrical Hardware Design Engineer

March 2025

About C-Motive

C-Motive is a startup with facilities in Middleton and Milwaukee, WI commercializing electric motors with sustainability and efficiency as top priorities. This technology was born out of UW-Madison and will be the first of its kind on the market.

A C-Motive Electrostatic Motor

Half of all electricity globally is consumed by electric motors. C-Motive's patented electrostatic motor technology delivers 95%+ efficiency, uses no rare-earth metals, less than 1% the copper, and has the potential to deliver over a gigaton of carbon savings in the next decade.

The global motor marketplace is $100B annually and C-Motive is poised to become a significant player in the coming few years. No one else in the world is developing electrostatic machines and our goal is to become the reference motor technology for a new generation of products.

Electrical Hardware Design Engineer

Variable speed motors cannot function without a variable frequency drive, and C-Motive's electrostatic motor is no different. Because nothing in the world works quite like it, we must engineer our own drive to make it sing.

C-Motive is seeking a hardware developer within the drive development team. The individual will translate product requirements and specifications into electrical designs, hardware prototypes, and ultimately manufacturing-ready designs for contract manufacturers.

It is expected that this position will have prior experience designing and building low-cost products in the industrial marketplace, with an emphasis on electrical hardware development in embedded and power electronics systems. This role will work closely with other teams to move quickly and collaboratively. Prior start-up company experience is a strong plus but is not required. We are looking for someone

that enjoys tackling day-to-day challenges, enjoys hands-on work, actively prioritizes tasks, is highly organized, communicates and documents effectively, and produces high-quality, low-cost hardware quickly and efficiently.

This role will combine expertise in power electronics and embedded systems, comprising: power electronics design, embedded hardware design, PCB design, thermal design, magnetics design, filter design, EMI/EMC compliance, analog and digital circuit design, relevant standards (e.g., UL, IEC), and test program development.

What You Will Do

- Design next-generation, production-intent electrostatic drive circuits, including digital processing, analog and digital interfaces, UI, safety, and power conversion
- Develop schematic diagrams of circuits and select components
- Perform PCB layout of circuits and test samples against requirements
- Contribute to development of product requirements and specifications within a larger team
- Analyze circuits using computer simulations and laboratory evaluation.
- Perform basic electrical component assembly as needed
- Collaborate with and communicate progress to development, testing, operations, executive and various other teams
- Prepare and maintain a variety of design validation plans and reports
- Contribute to handoff of designs to manufacturing
- Advise and troubleshoot electrical issues as needed

Qualifications

- Minimum 5 years of experience designing and building electrical circuits of launched products
- Bachelor’s degree or equivalent in related technical field
- Familiarity with industrial electrical standards, e.g., IPC, IEC, IEEE, UL, and gaining requisite approval/certification
- Experience with schematic capture, PCB layout software, and BOM generation.
- Experience using oscilloscopes, power analyzers, impedance analyzers and other electrical test equipment
- Experience developing low-cost or otherwise ‘commoditized’ products
- Printed circuit board design, soldering, troubleshooting and rework experience
- Referenced strong written and verbal communication skills

Bonus Qualifications

- Master's degree or equivalent in relevant field
- Insulation coordination experience
- Magnetics design experience
- Experience working with high voltage electrical equipment and an understanding of electrical shock hazards

C-Motive is committed to equitable compensation and we offer a generous benefits package to make sure you have the support you need. We offer a take-what-you-need paid time off program and every employee, regardless of gender identity or expression, is eligible for paid parental bonding leave. We have implemented a 401k program and all employees are granted stock options with typical vesting periods. We are committed to creating an inclusive environment for all our employees and are seeking to build a team that reflects the diversity of the people we hope to serve with our revolutionary products. C-Motive is proud to be an equal opportunity employer.

To learn more about C-Motive, our team, and our company culture, please visit: c-motive.com/about/mission-vision-and-values

To apply for this position, visit this link.