

Electrical Systems Engineer

We know that air pollution is cutting short people's lives and causing health problems, that greenhouse gas emissions are warming the planet and drastically changing our ecosystems, and we know that the emissions from the world's maritime fleet is a major contributing factor in all of this. We also know how to solve this problem. Our mission is to enable marine operators of all kinds to enjoy the benefits of zero emission hydrogen fuel cell technology. We are building the first commercial hydrogen fuel cell ferry in the world and that is just the beginning. Let's get this done together.

Role

Safe and efficient electrical power flow is key to producing the most advanced marine powertrain in the world. You design the architecture of our complete electrical system, with power levels from 100's of kW to MW scale, with prototyping and verification in our shop.

Responsibilities

- Develop functional requirements and specifications for system hardware (instrumentation, controllers, power conditioning devices, etc.) and evaluate components from various suppliers.
- Create electrical designs, schematics, flow charts, I/O maps, harnessing drawings, Bills of Materials, and termination sheets for low voltage control systems as well as high voltage (up to 1,000 VDC/VAC) power flow.
- Support product development and prototyping efforts with design and hands-on work.
- Assist in preparing Design Verification Test Plans, Periodic Safety Test Plans, Failure Mode and Effect Analyses/Qualitative Failure Analysis for US Coast Guard and/or Class submittals
- Stay up-to-date on the latest electronic equipment and components and opportunistically integrate new equipment into the design.
- Work with our Marketing, Product, and Sales staff to develop market- and customer-specific solutions.
- Communicate easily with customers, strategic partners, and other stakeholders regarding the details of GGZEM's core hydrogen technologies.
- Some travel may be required.

Job Qualifications

Minimum qualifications:

- Bachelors or Master's Degree in Electrical Engineering, or Marine Engineering with focus on electrical systems
- Experience in Electrical CAD packages such as Mentor, E3 or AutoCAD Electrical or other electrical schematic software packages
- Experience with HIL Simulation
- Experience with:
 - Model development and simulation tools,
 - Circuit analysis,
 - Power electronics and thermal management,



- EMI and RF,
- Motor control,
- Industrial design/debugging/validation experience with inverter, charger, AC/DC or DC/DC converters
- Experienced with low voltage harness design, packaging and generating harnesses and electrical schematic using CAD software
- Experience preparing clear written summaries and giving presentations
- Proactive, innovative, and flexible mindset
- Comfortable working as a key contributor in a small startup team
- Open minded to occasionally work outside your specified role to help the company do what it needs to do to meet deadlines and scale quickly
- Experience with and enthusiasm for with tinkering, making, hacking, hands-on hobbies and projects, etc.
- Legal authorization to work in the United States

Preferred qualifications:

- Control systems expertise:
 - Demonstrated experience in software and hardware development of controls and data acquisition systems.
 - Understanding of several programming languages and control device networks and protocols for PLCs, PCs, or DCS systems and networking protocols in order to select the best solution
 - Experience with PLC and real-time programming using ladder logic and/or structured text.
 - Experience with various PLC platforms and HMI packages
- Knowledge of C or C++, Python, VB, MATLAB/Simulink, MathCad, etc.
- Professional Engineering (PE) License or Engineer-In-Training (EIT) Certificate
- Digital drive (AC and DC) experience

Perks

GGZEM provides:

- Full benefits package
- Equity ownership in a high-growth company
- Competitive salary with bonus structure
- Flexible work hours and environment
- Training and growth opportunities
- Minimal bureaucracy
- Empowerment to do your job
- Fun, challenging work with a purpose