Job Description - Senior System Design Engineer

Job title:	Senior System Design Engineer
Department:	Fundamental Technology/Industrial Converter Technology Department
Location:	Birmingham
Hours of work:	37 hours a week
Contract:	Permanent
Salary:	Competitive
Working hours:	Hours: 8:00 – 17:00 Mon -Thurs and 08:00 -14:00 on a Fri (1hour lunch).
Reference:	10-7

About Zhuzhou CRRC Times Electric UK Innovation Center

Zhuzhou CRRC Times Electric UK Innovation Center (TEIC) is a subsidiary of the CRRC Corporation Limited, the world's leading propulsion and control systems provider in the rolling stock industry. Our mission is to design, develop and produce state of the art power electronics systems and components for automotive electric vehicles, rail, and renewable energy sectors. Please Follow us on LinkedIn or visit https://teic.crrczic.cc/ for further details.

Overview of the role:

We are looking for a Senior System Design Engineer with AI application experience to join our team at TEIC. This role will be responsible for the design, simulation and optimization of power electronics converter system, component technical specifications and interface definition, component sourcing and procurement, system integration, system testing, and promote technology exchange and cooperation. The successful candidate should have experience in Systematic application of AI/generative AI to the entire power electronics design process.

What you will be doing in this role:

- Responsible for system design for prototype development of power electronics converter, including but not limited to system technology requirements analysis, system solution design, system simulation optimization;
- Research on cutting-edge technology and market demand for power electronics converter, and form a phased research report;
- System integration, including source and procurement of components, coordination and participation in prototyping;
- System integration testing, including test programming, test results collation and review;
- Participate in the development of the company's technical route planning;
- Responsible for sub-component technical specification definition, interface definition, and participation in sub-component development work;
- Perform an integrity review of the system design work and be responsible for archiving the project achievements;
- Technical exchanges with market personnel, suppliers, customers, bidding, etc.;
- Provide other management support;

Other responsibilities

- Budget control on prototype development;
- Actively collaborate with other groups and colleagues in the same group on current projects, organize relevant meetings, follow up and timely report on key issues;
- Establish and maintain effective working relationships with core technology members to ensure efficient and rapid delivery of technical information within the department;
- Manage and maintain the relationship with external suppliers, universities and research institutions and customers, keep efficient communication, and learn about cutting-edge technology;
- Commitment to equality of opportunity;
- Commitment to Health & Safety in the workplace;
- Further enhance work ability and pursue better career development;
- Complete other work assigned by line manager;

We would like you to have:

- Priority to the Systematic application of AI/generative AI to the entire power electronics design process
- Power electronics or other related degree, with 5 years of working experience in power electronics;
- PhD degree with at least 3 years related experience;
- Rich experience in hardware design of power electronic converter projects based on IGBT or SiC MOSFET at 1200V voltage level or above;
- Experience on different topologies of converters, e.g. AC/DC, DC/AC, DC/DC, etc., and the control strategies;
- Experience on multi-level converter development, e.g. 3 level, 5 level, or higher;
- Components loss analysis, system efficiency mapping and thermal simulation;
- Familiar with the basic process of development of power electronics converter, relevant standards and laws and regulations, and have deep understanding and practical experience;
- Rich experience on control loop design, simulation, and testing;
- Hands on experience on application software implementation;
- Proficiency in Plecs, Matlab, CAD, CAE, Ansys, Office software;
- Understand principle of mechanical structure design, ability to perform concept package study;
- Attention to the details in work to ensure accurate job information;
- Hardworking, passionate, strong sense of professionalism and responsibility;
- Excellent communication and coordination skills;
- Excellent system thinking and coordination skills;
- Strong resistance to stress and flexible handling of urgent tasks at work;
- Excellent time management;
- Excellent English communication and ability to prepare technical documents;

Benefits

TEIC is a great place to work with opportunities for professional and personal development. Our benefits include:

- 25 days holiday + 8 bank holidays
- Holiday allowance increase with length of service
- Bupa healthcare
- Healthcare vouchers
- Free on-site car parking
- Free EV charging
- Free lunch Monday to Friday

- Contributory Pension
- Life assurance
- Company sick pay
- Professional Membership fees paid e.g. CIPD, IEEE

To find out more about TEIC visit www.teic.crrczic.cc.