

Controls & Instrumentation Engineer (Job Ref: CIE)

About the Company

Porotech Ltd (Porotech), the Gallium Nitride (GaN) material technology developer and spin-out from the University of Cambridge, focuses on the development of high performance and energy efficient wide-bandgap compound GaN semiconductors by applying cutting-edge material technologies and solutions to unleash the full potential of GaN to revolutionise the electronics industry.

Porotech's unique production process allows the controlled creation of a new class of nanostructured GaN semiconductor materials providing new opportunities for device engineering. We can control the process to vary the GaN nanostructures and hence engineer a wide range of material properties, such as optical, mechanical, thermal and electrical, and consequently offering an entirely new material platform for semiconductor devices to be built upon.

GaN is the silicon of the future, as it has many more interesting properties, including energy efficiency, than any other semiconductor materials. GaN-based LEDs can save 10% of entire world's electricity consumption. GaN-based transistors can operate 100 times faster than those in silicon whilst consuming 10 times less power.

Porotech's unique and world leading material technologies and device solutions will deliver multifunctional GaN semiconductor wafers with material properties and functionalities tailored and targeted to high impact final device applications. GaN has enormous potential in energy efficient lighting and power management, as well as lasers, quantum light sources, sensors, and energy generation, and our new material technologies will help make that potential a reality.

About the role

We are now looking a skilled Controls & Instrumentation Engineer (CIE) with experience in software, signal processing, controls and AI/ML algorithms to join our production team. This is an important role in our state-of-art company to revolutionise the future and is responsible for designing and developing tools used to monitor and control machinery, processes and systems.

We are seeking individuals who can:

- Develop/implement on-line parameter estimation methods for process monitoring, calibration and optimisation;
- Develop control techniques to improve control performance and repeatability of process;
- Generate C/C++ code for real-time embedded integration;
- Implement/debug/test modelling and control algorithms;
- Design test bench and simulation platforms to verify the model and control systems;
- Work closely with engineers, designers, project managers of varying disciplines to develop dynamic models of the process for performance monitoring, fault detection, and predictive maintenance and tighter control;
- Project management within cost and time constrained environments;
- Developing communication, control philosophy, and cause and effect documents.

Essential requirements:

- Demonstrable professional and industrial experience in control/simulation environment.
- Demonstrable experience of linear feedback control system design, feedforward control and MIMO control.
- Demonstrable experience of signal processing, IIR/FIR filter design, observer design, Kalman filtering, and iterative learning.
- Strong skills in modelling and simulation using MATLAB/Simulink, C/C++, Python
- Knowledge of adaptive control, optimal control, model predictive control (MPC), and advanced process control (APC) highly desirable
- Experience in embedded control systems, machine learning, Failure Detection and Classification (FDC) (an advantage).
- Excellent verbal and written communication skills.
- A strong analytical and problem solver and ability to working in a problem-oriented team

Summary:

At Porotech, we would like you to enjoy the success of the company to emerge from the UK and lead the world's III-nitride semiconductor development, which you will be helping to build and be part of. It is an ideal time to join with a business with unique technology and products that are ready to be delivered and going to change the market.

Competitive salary dependent on experience. If you are interested in helping us change the world, send your CV with a cover letter to info@porotech.co.uk. We look forward to making your acquaintance.