# Job Specification Materials Characterisation Engineer

Kubos Semiconductors is developing and commercialising its patented technology in cubic gallium nitride (GaN) and has the potential to significantly increase the energy efficiency of LEDs particularly for red microLEDs. Kubos' technology can provide a fundamental advantage in a number of markets, namely, Displays, Lighting and Communications.

Kubos has a small team of its own but is fabless, with all its development carried out at third party facilities including both academic institutions and commercial manufacturing facilities. Kubos plans to license its technology to existing large OEMs and LED manufacturers. The ability to directly substitute Kubos' cubic-GaN LED stacks for conventional LED structures provides a low barrier to entry to developers wishing to take advantage of the technology.

# Job brief

We are looking for a **Materials Characterisation Engineer** excited by the prospect to work in an early-stage company and to deliver against the company's GaN based LED development plans. An ideal candidate will be someone with hands-on expertise with III-Nitrides technologies (preferably LEDs) and the skills to support the research and development of GaN devices for optical device applications, analysing material and device structures to enable the development of high-performance devices for target applications. They should have several peer-reviewed publications in the photonics sector, highlighting their technical know-how in the field of materials such as GaN/In(AI)GaN and it will also be useful to have experience in Silicon Carbide.

This role will report directly to the VP of Development (once appointed) and the CEO in the interim.

# Summary of the role

- Responsible for characterisation and test methodologies of our cubic GaN material and cubic Silicon carbide growth substrate
- Developing and creating new processes, including introducing appropriate techniques to support the analysis and further R&D of the material structures for optical device applications (LEDs specifically)
- Detailed analysis of characterisation and test results, using both internally developed and external techniques
- Using programming languages such as Python to analyse data and report findings to our technical team
- Assist in transfer of the technology and results between academic associates, Kubos and its customers

# Responsibilities

- Arrangement and management of access to characterisation techniques such as PL, Nomarski, XRD, TEM, AFM and SIMS at our sub-contract/partners
- Analysis and interpretation of the data generated by these techniques based on a detailed understanding of the information they provide.
- Visiting Kubos' /partners and customers as required to monitor test and characterisation methodologies
- Build software tools using programming languages such as Python or excel to automate analysis of results and correlate material properties to device results
- Developing new characterisation methodologies and improved test procedures, both internally and with suppliers, to rapidly iterate development of our material and LED device structures
- Feedback and discuss outcomes with Kubos' technical team to provide constructive feedback to future growth campaigns
- Updating company technical records and reporting accurately results and conclusions, as required



- Working closely with the Technical Director/CTO and VP of Development on the technical plan to ensure delivery of the technology on time and within budget
- Supporting the transfer of technology to Kubos' customers and providing quality customer support, exceeding customer requirements

#### Requirements

- A PhD in materials, physics, semiconductor technologies, or other relevant field. Candidates with a Bachelor's degree and at least 5 years' practical experience in a relevant field will also be considered.
- Previous track record in developing materials characterisation processes
- Experience in development and manufacture in hi-tech industries is preferrable
- Understanding and experience of the growth or processing of both GaN or SiC epitaxial structures would be an advantage
- Good interpersonal and effective communication skills
- Demonstrate strong problem-solving skills
- Capable of grasping new scientific concepts and technologies quickly
- A team player with strong interpersonal skills
- Confident at presenting and handling Q&A from a technically savvy audience
- A "self-starter" who is able to work independently and as part of a wider team
- This role will be based in Cardiff, Wales
- Willingness to travel both domestically and overseas from time to time
- Proof of a right to work in the UK

#### **Other Duties**

• Please note that the candidate may be asked to perform additional or alternative duties and activities as required by the needs of the business.

#### **Contact details**

For further information and to apply in writing for this role with a copy of your CV, please contact: Caroline O'Brien. Email: <u>caroline.obrien@kubos-semi.com</u>. The application deadline is 30th April 2024.