KUBOS
SEMICONDUCTORS

Job Specification
LED Device Manager

Kubos Semiconductors is developing and commercialising its patented technology in cubic gallium nitride (GaN) that 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 in 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 an **LED Device Manager** excited by the prospect of working in an early-stage company to deliver against the company's GaN based LED device development plans. They will have the skills to support the research and development of GaN materials for optical applications, by further developing and improving our microLED device processing techniques. The ideal candidate will be someone with hands-on expertise with III-Nitrides device technologies (preferably LEDs). They should have several peer-reviewed publications in the field, highlighting their technical know-how in the design and manufacture of GaN based devices.

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

Summary of the role

- To oversee the production of LED test structures in Kubos' cubic-GaN wafers by managing access to the clean room and the running of device batches.
- Development of new mask sets to support the materials development plans and roadmaps.
- Hands on processing of device processing in the clean room
- Support the transfer of device processes to customer sites.
- To perform device characterisation and compile device data to provide feedback on the material performance and reproducibility of processes.
- To develop and document 'best practice' in cubic-GaN microLED processing, identifying opportunities to build Intellectual Property and know-how.
- Work closely with suppliers (for example, the Institute of Compound Semiconductor) to deliver the optimum and well documented solutions for Kubos.
- Assist and support the successful technical evaluation of the technology with the internal team and customers alike.

Responsibilities

- Management of access to partner's clean room and the running of device batches
- Operation of device measurements systems at partner sites
- Provide analysis of Kubos' LED devices and report results to ensure the impact of device processing is analysed alongside and in conjunction with the epitaxy results.
- Work closely with the team to understand device test data, results and trends to offer improvements in device uniformity and yields.
- Ensure the processing requirements are aligned and consistent with the overall strategy within Kubos' technical and commercial plans. This includes designing new mask sets, if required and analysing processing techniques to improve the performance of our microLEDs.
- Developing, reviewing, and discussing the previous outcomes with Kubos' technical team and providing constructive feedback to contribute to each cycle of Kubos' R&D.

- Updating and maintaining company technical records for LED fabrication and reporting accurately results and conclusions, as required.
- Basic interpretation of wafer level characterisation data, such as photoluminescence and Nomarski, XRD, TEM, AFM and SIMS to understand any impacts on device performance.
- Working closely with the Technical Director/CTO, VP of Development on the technical plan to ensure delivery of the technology on time and within budget.
- Support the fabrication requirements at our customer sites, as required, providing quality customer support, exceeding customer requirements.
- Visiting Kubos' sub-contract/partners and customers as required to monitor LED fabrication and test processes.
- Develop process improvements, internally and with suppliers, to rapidly identify any differences or issues between customer processing and Kubos' processing techniques.

Requirements

- Educated to Ph.D. Level or significant hands-on experience in a relevant field.
- Previous track record in fabricating semiconductor device structures.
- Skilled in device processing techniques such as, mask design, optical and e-beam lithography, metal deposition, wet and dry etch, and CMP.
- Familiarity with processing techniques used for hexagonal GaN devices particularly LEDs would be an advantage.
- Experience in performing on-wafer measurements on semiconductor devices
- Experience in developing and delivering technology in hi-tech industries is preferrable.
- An understanding of the manufacture and processing of semiconductor epitaxial wafers.
- A team player with good interpersonal and effective communication skills.
- Willing to travel.
- Demonstrated strong problem-solving skills.
- Capable of grasping new scientific concepts and technologies quickly.
- Confident at presenting and handling Q&A from a technically savvy audience.
- A "self-starter" who can work independently and as part of a wider team
- This role will be based in Cardiff, Wales
- 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: caroline.obrien@kubos-semi.com. The application deadline is 30th April 2024.