

Job Title

Fabrication Engineer – MicroLED and Semiconductor Device
Fabrication

**About Us**

Pixel-Flo is a spin-out from the University of Sheffield developing Continuous-Flo™, a new manufacturing platform designed to solve one of the critical bottlenecks holding back the adoption of next-generation microLED displays.

MicroLED displays offer major performance advantages over LCD and OLED technologies, but the display industry has been limited by the lack of a scalable and cost-effective manufacturing solution. Pixel-Flo's proprietary continuous-flow mass-transfer process addresses this challenge, unlocking the potential of microLED display across wearable devices, automotive display, TV and more.

We have recently secured significant, multi-year funding and are expanding our team, office and laboratory capability in Sheffield. This is an opportunity to join Pixel-Flo at the point where university-originated technology is being translated into an industrial engineering platform and a high-growth deep-tech business.

As we scale, we are building a multidisciplinary team across engineering, process development, commercial activity and operations. We are looking for people who want to help shape the company from an early stage and contribute to our supportive culture that is ambitious, innovative, practical and collaborative.

The Opportunity

We are looking for a hands-on Fabrication Engineer to support the development and optimisation of the microLED devices and patterned substrates at the core of Pixel-Flo's fluidic mass transfer technology. This role is critical to translating device and substrate designs into working hardware for use in our transfer process.

You will fabricate and characterise microLED devices and patterned substrates, working closely with the process engineering team to iterate designs, improve yield and support process development.

This is a key hands-on role requiring strong cleanroom experience, careful attention to detail the ability to work as part of an exciting multi-disciplinary team in a fast-moving startup environment.

Role and Responsibilities

You will help develop, document and optimise the fabrication processes used to produce Pixel-Flo's devices and substrates - supporting improvements in process repeatability, transfer yield and defect reduction. Your work will directly influence device design, substrate architecture, fabrication workflows and overall process performance.

You will:

- Fabricate semiconductor micro-devices and patterned substrates in a cleanroom environment, maintaining high standards of repeatability and diligence
- Execute and optimise fabrication processes including photolithography, wet/dry etching and metallisation
- Design and modify photomasks/layouts using GDSII-based tools (e.g. KLayout)
- Perform structural, electrical and optical characterisation of fabricated devices
- Maintain accurate process documentation and experimental records
- Track and report project progress clearly, identify risks early, and develop practical solutions to technical problems
- Support process development by fabricating test structures and experimental device designs
- Contribute to process troubleshooting, failure analysis and defect reduction
- Work closely with wider engineering teams including process engineers to support optimisation of transfer yield and device integration
- Contribute to the development of robust fabrication workflows, standard operating procedures and process control methods
- Work safely and effectively within cleanroom, laboratory and workshop environments, following relevant procedures and documentation requirements

Must-Have

- Hands-on cleanroom device fabrication experience
- PhD or comparable experience in a related engineering or science discipline
- Strong experience with photolithography, dry and wet etching, metallisation, SEM and structural characterisation
- Strong communication skills, with an open and collaborative approach to reporting results, discussing problems and working across teams
- Be strongly motivated and capable to apply your existing skills and develop new ones to deliver progress towards Pixel-Flo's technical and commercial ambitions

- Dependable, diligent and flexible, with the ability to deliver high-quality technical work in a dynamic start-up environment where priorities can evolve quickly

Nice-to-Have

- Experience with III-nitride materials and LED device fabrication
- Experience developing and optimising device fabrication processes
- Experience with direct write laser lithography
- Background in LED or optoelectronic devices
- Understanding of semiconductor device physics
- Electrical and optical device testing
- Experience with photomask design tools (e.g. KLayout)
- Technical project management experience

What Make This Role Different

You will play a hands-on role in developing next-generation micro-device integration technology through semiconductor fabrication, device characterisation and process optimisation within a highly iterative environment. As an early member of a multidisciplinary engineering team, you will have broad technical exposure to new skills and techniques and significant project ownership from an early stage. You will have access to a range of high quality facilities in partner organizations such as the university of Sheffield's cleanrooms and also in Pixel-Flo's new and expanding dedicated facilities.

Details

Benefits: Competitive salary, company pension scheme with 4% employer contribution, eligibility for participation in the company share option scheme - **Own the success you create**. 25 days annual leave plus bank holidays.

We work: Monday - Friday - 37.5 hours

Location: Central Sheffield

Remote: No

How to Apply

To apply, please send your CV and a cover letter to rick@pixel-flo.com

Pixel-Flo is growing, and we are recruiting across a number of roles as we build our engineering, commercial and operational capability. If this specific role is not quite the right fit, but you believe you could make a strong contribution to Pixel-Flo, we would be pleased to hear from you. Please send your CV and a short note explaining where you think you could add value to the team.