Job Title
Process Engineer – Thin Film Coating and Fluidic Assembly

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 Process Engineer to develop, optimise and scale Pixel-Flo's slot-die based Continuous-Flo™ process for microLED mass transfer.

This role sits at the centre of our technology development. You will design and run experiments, develop process windows, analyse yield and defect mechanisms, and translate experimental learning into repeatable process capability on an industrial coating platform.

You will work closely with Pixel-Flo's co-founders, who invented the core technology, as well as with hardware, systems and fabrication engineers. Together, you will help develop the coating tools and process conditions to take Continuous-Flo™ onto a commercially relevant manufacturing platform.

The role will suit someone with strong practical thin-film coating or fluidic process development experience, ideally including slot-die coating, who is comfortable working with uncertainty, solving problems experimentally and helping build a new process from the ground up.

You will:

- Design, run and analyse experiments on Pixel-Flo's slot-die based Continuous-Flo™ process
- Develop process windows to improve transfer yield, uniformity, repeatability, defectivity and throughput
- Build a deep practical understanding of the fluidic self-assembly mechanisms governing microLED transfer
- Investigate the role of coating parameters, ink formulation, fluid properties, substrate design and process conditions in transfer performance
- Work with hardware/systems engineers to define, test and improve coating tools, fixtures, process controls and experimental platforms
- Collaborate with fabrication engineers to optimise MicroLED design, substrate architecture and process integration for improved yield
- Define and implement metrology approaches to quantify transfer yield, defects, failure modes and process repeatability
- Use structured experimental methods, including DOE where appropriate, to identify key process variables and interactions
- Translate experimental findings into documented, repeatable process recipes, operating procedures and design rules
- Use analytical modelling, simulation or data analysis where helpful to guide process understanding and optimisation
- Communicate progress, technical risks and experimental findings clearly to the wider team and leadership

Must-Have

- Hands-on experience developing thin-film coating, fluidic, printing, deposition or related process technologies
- Experience with slot-die coating or a closely related coating/process platform
- PhD or comparable industrial experience in a relevant engineering, physical science, materials, chemical engineering or process development discipline
- Strong practical experimental skills, including designing, running, analysing and documenting process development experiments
- Experience identifying process variables, building process windows and improving repeatability, yield or defect performance

- Good understanding of fluid behaviour relevant to coating processes, such as viscosity, wetting, surface tension, rheology, meniscus stability or capillary effects
- Comfortable working with complex, uncertain and evolving processes where the solution is not already known
- Strong problem-solving skills and a practical approach to making experimental progress
- Able to work collaboratively across process, hardware, systems and fabrication teams
- Reliable, diligent and systematic in recording data, communicating results and following through on actions
- Comfortable working in a dynamic start-up environment where priorities can evolve quickly

Nice-to-Have

- Deep experience with slot-die coating, including process setup, coating window development, defect reduction and scale-up
- Experience with micro-scale particle assembly, colloidal systems, inks, suspensions or functional materials deposition
- CFD, fluid dynamics or coating-flow modelling experience
- Experience using DOE or statistical methods for process optimisation
- Experience with semiconductor, display, microLED, printed electronics, photovoltaics, battery, OLED or advanced manufacturing processes
- Experience working with automated coating, printing, deposition, inspection or metrology equipment
- Experience translating lab-scale processes onto industrial or semi-industrial equipment platforms
- Understanding of wetting, surface chemistry, capillary effects, rheology or interfacial phenomena
- Experience working in a start-up, scale-up, R&D or product-development environment

What Make This Role Different

This is not a routine process engineering role. You will be helping develop a new manufacturing process at the point where university-originated invention is being translated onto an industrial coating platform.

You will work closely with a wide and multidisciplinary team, with significant opportunity to shape how Continuous-Flo™ is developed, measured, optimised and

scaled. Your work will directly influence process yield, equipment specification, device and substrate design, customer demonstrations and future commercial engagement.

This role will suit someone who enjoys hands-on experimental work, is comfortable with uncertainty, and wants to play a central role in turning a novel deep-tech process into a robust manufacturing platform.

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.