Candidate Information

Position: Senior Engineer â€“ Photonics Design
School/Department: AMIC
Reference: 26/113349
Closing Date: Monday 22 June 2026
Salary: £41,519 - £49,536 per annum.
Anticipated Interview Date: Thursday 2 July 2026
Duration: 3 years

JOB PURPOSE:

We are seeking a highly motivated Photonics Design Engineer to join AMIC's Nanotech & Photonics team. The successful candidate will contribute to the design, simulation and development of cutting‑edge photonic systems for industrial and research applications. This role will support industrial R&D projects, collaborative innovation programmes and capability‑building activities as AMIC expands its photonics design offerings. Working with partners across industry, academia and national technology centres, the engineer will help deliver applied projects in areas including photonic integrated circuits (PICs), free‑space optical systems, and advanced photonic component modelling. The role will also support training activities, including the development of AMIC's Photonics Academy and Innovation Hub initiatives.

AMIC – a £100M investment through the Belfast Region City Deal – is a collaborative, innovative powerhouse of advanced manufacturing designed to elevate Northern Ireland globally. We support regional economic growth by enabling high‑value manufacturing innovation, improving competitiveness and attracting new inward investment.

When you join AMIC, you gain access to leading industrial technologies, an ambitious multidisciplinary team, and a culture shaped around innovation, impact and collaboration. Our team's core capabilities span digitalising manufacturing, smart design, sustainable polymers & composites and nanotechnologies & photonics. We are excited to continue expanding throughout 2026, strengthening our contributions to industry and the wider research ecosystem.

MAJOR DUTIES:

1. Undertake high‑quality industrial R&D and knowledge transfer in photonics design, simulation and modelling, aligned with AMIC's Nanotech & Photonics pillar.
2. Develop and implement simulation workflows using tools such as ANSYS Lumerical (PIC, FDTD, MODE) and ANSYS Zemax/OpticStudio for free‑space, imaging and illumination system design.
3. Support the design and optimisation of photonic integrated circuits, waveguide components, optical assemblies and related subsystems for industrial partners.
4. Work collaboratively with industry, technology providers, and national technology centres to deliver photonics‑focused applied research projects.
5. Support industrial engagement by demonstrating photonics capability and delivering simulations or modelling tasks to address partner challenges.
6. Contribute to the development of the Photonics Design Innovation Hub and Photonics Academy, including training materials, workshops and internal upskilling initiatives.
7. Mentor and support PhD students, interns and early‑career staff working in photonics design as AMIC's capability continues to grow.
8. Produce high‑quality technical reports, documentation and demonstrations to support business development and future project funding bids.
9. Represent AMIC at conferences, trade shows, industry visits and technical meetings to enhance the profile of AMIC and Queen's University Belfast.

10. Contribute constructively to multidisciplinary project teams and support cross‑pillar collaborative activities within AMIC.
11. Undertake any other duties appropriate to the post as may reasonably be requested by management.

ESSENTIAL CRITERIA:

1. Honours degree (or equivalent) in physics, photonics, semiconductors, optical engineering or a related discipline. Consideration may be given to candidates without a degree but with substantial relevant industrial experience in a similar photonics design role.
2. Demonstrable experience in photonics, optics or PIC design gained through industry, research or advanced academic work.
3. Understanding of electromagnetic modelling principles relevant to integrated photonics and/or free‑space optics.
4. Experience using at least one photonic simulation environment (e.g., Lumerical, COMSOL, CST, Zemax, RSoft).
5. Evidence of delivering high‑quality technical outputs, design studies or simulation‑based investigations.
6. Experience handling complex problem‑solving tasks and developing practical technical solutions.
7. Ability to work collaboratively in multifaceted project environments, meeting deadlines and managing workload effectively.
8. Excellent written and verbal communication skills, including ability to communicate complex technical concepts.
9. Strong IT skills (Microsoft PowerPoint, Word, Excel).
10. Willingness to visit industrial partners and attend meetings, conferences or training nationally and internationally as required.

DESIRABLE CRITERIA:

1. A relevant higher degree (MSc or PhD) in photonics, optical engineering or a related discipline.
2. Experience in designing or modelling PIC components (e.g., waveguides, couplers, interferometers, gratings).
3. Experience using ANSYS Lumerical (FDTD, MODE, INTERCONNECT) or ANSYS Zemax/OpticStudio.
4. Experience with fabrication‑aware design or working with photonic foundry PDKs.
5. Experience working with industrial optical systems such as imaging systems, illumination systems, fibre‑optic assemblies or laser‑based components.
6. Experience supporting or mentoring early‑career researchers or students.
7. Experience working with industrial partners, including SMEs or OEMs, on applied R&D projects.
8. Knowledge of cleanroom processes, nanofabrication, or optical characterisation techniques.
9. Health & Safety qualifications or experience working in controlled laboratory environments.

ADDITIONAL INFORMATION:

Informal enquiries can be directed to: Richard Jackson - r.jackson@qub.ac.uk.