



Candidate Information

Position:	Senior Research Fellow in Integrated Photonic Fabrication
School/Department:	Ctre for Nanostructured Media
Reference:	22/109755
Closing Date:	Monday 2 May 2022
Salary:	£42,149 per annum
Anticipated Interview Date:	Week commencing 16 May 2022
Duration:	Available until 30 November 2026

JOB PURPOSE:

The following describes the type of work that is typically required of research staff at this level. It is not expected that anyone carries out all the activities mentioned below and some carry out additional duties.

MAJOR DUTIES:

Teaching:

1. Contribute through limited teaching such as undergraduate project supervision or short courses within the EPSRC-SFI Centre for Doctoral Training within own research specialism.
2. Be responsible for practical work where applicable, and advise students on techniques.

Research:

1. To lead on the establishment of the Integrated Photonics Fabrication activity within Smart Nano NI.
2. To lead on the delivery the integrated photonics fabrication R&D activities within/across the programme work packages.
3. To lead on the development of research strategy and delivery in the fabrication/realisation of integrated photonic prototypes and devices.
4. Deliver and sustain an associated research activity leading to a high quality (≥3.0*) research outputs profile.
5. Identify and develop opportunities to develop impact case studies arising from integrated photonics research.
6. Develop research proposals and to secure research contracts in research specialism to support self (and possibly a group of colleagues).
7. Disseminate research findings at appropriate national and international technical events and conferences.
8. Within research project, take the lead in setting research objectives and programme of implementation.
9. Direct, coach and develop more junior research staff and technical support where appropriate.
10. Ensure that research projects are completed on time and within budget.

Administration/Contribution to the Community:

1. Contribute to the School's outreach strategy by developing external links.
2. Develop links with relevant research groups, industries and external bodies to encourage technology transfer opportunities and create opportunities for future research projects.
3. Carry out designated administrative duties.

ESSENTIAL CRITERIA:

1. A relevant degree with a PhD completed in a relevant subject.
2. A high academic standing with a growing reputation in research within subject specialism assessed through outputs and achievements.
3. Knowledge of semiconductor physics, optical materials, and nonlinear optics.
4. Demonstrated expertise in one or more of photonic light sources, waveguides and plasmonic devices.
5. Demonstrated expertise in integrated photonics fabrication and testing, for either passive or active devices.
6. Experience performing original research, demonstrated through a record of invention, original publications in top-tier journals, and conference papers and presentations.

7. Ability to devise, advise on and manage related research programmes.
8. Experience, achievement and growing reputation in the discipline, reflected in relevant national committee memberships and/or involvement in national research events.
9. Ability to communicate complex information effectively.
10. Supervise research projects of undergraduate and postgraduate students.
11. Ability to manage resources.
12. Demonstrable intellectual ability.
13. Ability to supervise work of others in research team.

DESIRABLE CRITERIA:

1. 2-8 years post PhD background in optical physics and integrated photonics.
2. Holds a current independent research fellowship in the area of photonics.
3. Experience of working in collaboration with industry stakeholders.
4. Evidence of knowledge of photonic device fabrication workflows.
5. Semiconductor processing, metrology, and integration focused on one or more of the following technologies: Photonic integrated circuits (Silicon or III-V based), CMOS/bipolar electronics, embedded magnetic/phase-change memory, micro-electro-mechanical systems (MEMS), micro-opto-electro-mechanical systems (MOEMS), or heterogeneous integration
Optical and/or electrical device physics and characterization techniques.
6. TCAD process modelling and/or physical device design.
7. Experience in multi-project wafer (MPW) runs.
8. A high sense of commercial awareness, with knowledge and experience of procedures involving filing a patent and licence agreement.
9. Evidence of interest and engagement in education activities.
10. Ability to secure grants/contracts independently or as a leader of a section in major projects.
11. Experience of developing research methodologies and devising models, approaches, critiques and methods.
12. Evidence or experience of working with or developing industry collaborative projects/programmes.