



## Candidate Information

<b>Position:</b>	Senior Research Fellow in Integrated Photonic Design
<b>School/Department:</b>	Ctrre for Nanostructured Media
<b>Reference:</b>	22/109754
<b>Closing Date:</b>	Monday 2 May 2022
<b>Salary:</b>	£42,149 per annum
<b>Anticipated Interview Date:</b>	Week commencing 16 May 2022
<b>Duration:</b>	Available until 30 November 2026

### JOB PURPOSE:

Direction of Integrated Photonic Design within and beyond Smart Nano NI.

### 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 Design activity within Smart Nano NI.
2. To lead on the delivery the integrated photonics design R&D activities within/across the programme work packages.
3. To lead on the development of research and development strategy and delivery in the design of integrated photonics.
4. Deliver and sustain an associated research activity leading to a high quality (&#8805;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 and development 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 simulation, design, and testing, for either passive or active devices.
6. Experience in developing or using software for device performance simulations using, for example, COMSOL, Matlab/Simulink, FDTD codes etc.

7. Experience performing original research, demonstrated through a record of invention, original publications in top-tier journals, and conference papers and presentations.
8. Ability to devise, advise on and manage related research programmes.
9. Experience, achievement and growing reputation in the discipline, reflected in relevant national committee memberships and/or involvement in national research events.
10. Ability to communicate complex information effectively.
11. Supervise research projects of undergraduate and post graduate students.
12. Ability to manage resources.
13. Demonstrable intellectual ability.
14. 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. Experienced in the simulation, design, and layout of integrated photonic devices and circuits.
5. Evidence of knowledge of photonic device fabrication workflows.
6. A high sense of commercial awareness, with knowledge and experience of procedures involving filing a patent and licence agreement.
7. A high sense of commercial awareness, with knowledge and experience of procedures involving filing a patent and licence agreement.
8. Ability to secure grants/contracts independently or as a leader of a section in major projects.
9. Evidence or experience of working with or developing industry collaborative projects/programmes.