

Candidate Information

Position:	Research Fellow in Plasmonic Metrology
School/Department:	Centre for Quantum Materials and Technology (CQMT)
Reference:	22/110493
Closing Date:	Friday 6 January 2023
Salary:	£35,333 - £42,155 per annum
Anticipated Interview Date:	Week commencing 16 January 2023
Duration:	3 years with possible extension

JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of Smart Nano NI (www.smartnanoni.com) at Queen's University Belfast assisting in the planning and delivery of research in plasmonic metrology.

The post is a critical role, and as such, successful applicants will have responsibilities in independent research, supervision, planning, day to day lab management, collaborations, and outreach supporting Smart Nano NI.

MAJOR DUTIES:

1. To lead on the establishment of the plasmonic metrology activity as part of a team within Smart Nano NI.
2. To develop research plans to support development of new idea/concepts and devices in the far and near field for optical imaging, sensing and detection.
3. To integrate your research with other strands of optical/photonics design, test and fabrication in Smart Nano NI.
4. Produce high quality research outputs consistent with project aims and commensurate with career stage. This will include collaborating and co-authoring with PI and project team (as appropriate) on outputs.
5. Identify and develop opportunities to develop impact case studies arising from the research.
6. Disseminate research findings at appropriate national and international technical events and conferences.
7. Within the research project, take the lead in setting research objectives and programme of implementation.
8. Direct, coach and develop more junior research staff and technical support where appropriate.
9. Ensure that research projects are completed on time and within budget.
10. Contribute through limited teaching such as undergraduate project supervision or short courses within the EPSRC-SFI Centre for Doctoral Training within own research specialism.
11. Be responsible for practical work where applicable, and advise students on techniques.

ESSENTIAL CRITERIA:

1. A degree in a physical science or engineering.
2. Normally have or be about to obtain a PhD in optics/photonics.
(NB 'About to obtain' is normally defined as within 3 months of application date)
3. At least 3 years' relevant research experience to include:
 - Demonstrated expertise in the use of spectral attenuated total reflection metrology for plasmonic characterisation.
 - Demonstrated experience in developing or using software for optical/photonics device simulations using, for example, COMSOL, Zemax Optical Design, Matlab/Simulink, Ansys/Lumerical codes etc.
 - Demonstrated expertise in the design and realisation of plasmonic entities from thin films using photolithographic and/or electron beam lithography for the creation of either passive or active instruments/devices.
 - Experience performing original research, demonstrated through a record of invention, original publications in top-tier journals, and conference papers and presentations.
4. Ability to devise, advise on and manage related research programmes.
5. Experience, achievement and growing reputation in the discipline, reflected in relevant national committee memberships and/or involvement in national research events.

6. Ability to supervise work of others in research team.
7. Ability to communicate complex concepts/ information effectively verbally and through appropriate presentation modes.
8. Ability to manage resources.
9. Demonstrable intellectual ability.
10. Commitment to continuous professional development.

DESIRABLE CRITERIA:

1. 1-2 year post PhD background of research optical / photonic physics/engineering or integrated photonics.
2. Evidence or demonstrated experience of optical/photonic device test and validation of computational/simulated model/results.
3. Evidence of developing / using supercontinuum laser, or other, to build / undertake spectral plasmonic characterisation using attenuated total reflection or Kretschmann configurations.
4. Evidence of knowledge of photonic device fabrication workflows.
5. Experience of working in collaboration with industry stakeholders.
6. A sense of commercial awareness, with knowledge and experience of procedures involving filing a patent and licence agreement.
7. Evidence of engagement in education activities such as undergraduate teaching support or project supervision or its direct support or other recognised teaching duties.
8. Evidence of giving lectures as whole or part of modules in a programme.
9. Evidence or experience of working with or developing industry collaborative projects/programmes.
10. Contributed/invited talks at significant international conferences.
11. Presentations to non-specialist audiences.
12. Evidence of delegated resource management responsibility.
13. Evidence of assuming roles within a larger research team.