

Candidate Information

Position: Research Fellow
School/Department: School of Mathematics and Physics
Reference: 26/113588
Closing Date: Monday 21 September 2026
Salary: £42,972 - £51,270 per annum
Anticipated Interview Date: Wednesday 30 September 2026

JOB PURPOSE:

To join an Invest Northern Ireland funded program working towards control and optimisation of ion beams driven by high power lasers and their potential applications. The experimental work will be carried out employing high-power lasers at large-scale facilities both within and outside the UK. The candidate is expected to be an active member of the research team responsible for planning and delivery of the research activities.

MAJOR DUTIES:

1. Planning and undertaking experimental research activities employing high power lasers, both at the QUB and external facilities.
2. Carry out analysis and critical evaluations of captured data and interpret observations in light of current theories and understanding.
3. Liaising with internal/external collaborators and supervising MSc. and PhD students involved in the experiments and data analysis.
4. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
5. Assist grant holder in the preparation of funding proposals and applications to external bodies.
6. Carry out routine administrative tasks associated with the research project, such as organisation of project meetings and documentation, financial control, risk assessment of research activities.
7. Present regular progress reports on research to members of the research group, industries and external audiences to disseminate and publicise research findings.
8. Liaise, on a regular basis, with colleagues at Queen's University Belfast, with national and international partners, and with large-scale working groups and collaborations.
9. Carry out occasional undergraduate supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
10. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.
11. The above 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 above and some carry out additional duties.

ESSENTIAL CRITERIA:

1. Hold or about to obtain Ph.D. (or equivalent) in high power laser plasma interaction and related areas.
2. Significant experience in experimental research using high power lasers.
3. Experience in using computer codes for data analysis.
4. Experience of working in small/medium groups of researchers.
5. Sufficient breadth and depth of knowledge in the fields of high-intensity laser-matter interactions and particle (ions, electrons and neutron) acceleration.
6. Ability to communicate complex information clearly.
7. Ability to build contacts and participate in internal and external networks.
8. Ability to communicate effectively in English, both verbally and in writing.
9. Demonstrate a logical mind and intellectual ability.

10. Ability to assess and organise resources.
11. Ability to lead a small team of students and researchers.
12. Role is based in Belfast and will require regular national and international travel.

DESIRABLE CRITERIA:

1. PhD thesis and/or leading author publications on topics related to intense laser-driven ion acceleration.
2. Experience of planning and leading experimental campaigns at large-scale laser facility.
3. Experience with particle-in-cell and multi-physics simulation packages
4. Track record of publishing in high impact factor journals as one of the lead authors.
5. Track record of presenting (oral/poster) in international conferences.

ADDITIONAL INFORMATION:

Informal Enquiries to Prof Gianluca Sarri (g.sarri@qub.ac.uk)