

## Candidate Information

**Position:** Research Fellow in Laboratory Astrophysics  
**School/Department:** Astrophysics Research Ctre  
**Reference:** 21/109007  
**Closing Date:** Monday 26 July 2021  
**Salary:** £33,797 to £40,322 per annum  
**Anticipated Interview Date:** Tuesday 17 August 2021  
**Duration:** 3 years or until 30 September 2024 (whichever is soonest)

### JOB PURPOSE:

To be an active member of a research project team, involving staff and students in the School of Mathematics and Physics, undertaking duties in the planning and delivery of research on laser-produced plasmas.

### MAJOR DUTIES:

1. Undertake research activities in the area of plasma physics, namely: laboratory experiments including those remote from Queen's University; critical evaluation, modelling and interpretation of the experiments using computer-based data analysis tools, including spectral modelling codes.
2. Planning and fielding of large-scale experiments involving, for example, the set-up and operation of X-ray and optical diagnostics such as spectrometers and imaging equipment.
3. Work with external collaborators as appropriate, including experimentalists and plasma modellers.
4. Write up results of own work and contribute to the production of research reports, publications and proposals for laser facility time. Presenting results at relevant national and international conferences as required.
5. Help supervise (as necessary) and support postgraduate and undergraduate students in this area.
6. Read academic papers, journals and textbooks to keep abreast of developments.
7. Undertake any other duties which fall within the general ambit of the post.

### Planning and Organising:

1. Contribute to the planning of research projects through proposals for laser facility time and publications etc.
2. Plan own day-to day activity within framework of the agreed research programme.
3. Coordinate and liaise with other members of the research group over work progress.

### Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and any students who may be assisting with research.

### Internal and External Relationships:

1. Liaise on a regular basis with colleagues and support staff on routine matters.
2. Make internal and external contacts, to develop knowledge and understanding and form relationships that will ensure the success of the project.
3. Organise, attend and contribute to relevant meetings.
4. Contribute to the School's outreach programme by establishing links with local community groups, industries etc.

### ESSENTIAL CRITERIA:

1. Degree or equivalent in Physics or a physics-related subject.
2. A PhD in Experimental Plasma Physics either awarded or submitted by the time of taking up the post.
3. At least 3 years relevant research experience.

4. Demonstrable experience of leadership roles in the design and implementation of laboratory plasma physics experiments at major national and/or international facilities, such as CLF, LULI etc.
5. Experience of fielding diagnostics commonly used in laser plasma experiments, e.g. X-ray spectrometers, Thomson parabolas, streak cameras etc.
6. Experience of processing and analysing data produced by laser plasma experiments in an efficient manner.
7. A number of high quality refereed publications and reports in the research field, commensurate with stage of career.
8. Ability to contribute to method improvement where required.
9. Ability to interact with research colleagues and support staff.
10. Ability to analyse and communicate effectively.
11. Demonstrable intellectual ability, and ability to work in small and large groups.
12. Evidence of experimental leadership.
13. Ability to meet the mobility requirements of the post including attendance at international experiments, remote from Queen's University and outside the UK, for up to several weeks at a time.
14. Must be prepared to work unsociable hours during these experiments, e.g. at weekends.

**DESIRABLE CRITERIA:**

1. PhD awarded.
2. Experience in the use of plasma physics modelling codes.
3. Experience of plasma spectroscopy, use of CCD cameras and vacuum systems.