

Candidate Information

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| Position: | Research Fellow |
| School/Department: | School of Mathematics and Physics |
| Reference: | 19/107415 |
| Closing Date: | Tuesday 28 May 2019 |
| Salary: | £33,199 per annum |
| Duration: | One year |

JOB PURPOSE:

As part of an Engineering and Physical Sciences Research Council (EPSRC) funded program, the successful candidate will work towards advancing understanding, optimization and control of the intense, ultra-short, EM pulses generated from laser-foil interaction, and their application in condensed matter. The experimental work will be carried out employing the in-house TARANIS laser facility in collaboration with the centre of nanostructure media at QUB. A significant part of the work would involve running multi-dimensional Particle-in-cell and Multi-physics simulations. The post is available for a period of one year. The candidate is expected to be an active member of the research team responsible for planning and delivery of the research activities, and assisting in the development of research proposals.

MAJOR DUTIES:

1. Planning and undertaking experimental research activities employing high power lasers at the QUB facility.
2. Carry out analysis and critical evaluations of captured data and interpret observations in light of current theories and understanding.
3. Planning and undertaking computational research activities employing PIC and Multiphysics codes.
4. Liaising with internal collaborators in centre of Nanostructure media and supervising MSc. and PhD students involved in the experimental and theoretical activities.
5. Prepare, in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
6. Carry out routine administrative tasks associated with the research project, such as organisation of project meetings and documentation, risk assessment of research activities.
7. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

Planning and Organising:

1. Plan for specific aspects of research programmes. Timescales range from 1-6 months in advance and contribute to research group planning.
2. Plan for the use of research resources, laboratories and workshops where appropriate.
3. Plan own day-to day activity within framework of the agreed research programme.
4. Plan in advance to meet deadlines for journal publications and to prepare presentations and papers for conferences.
5. 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. Assist the supervisor in management of grant finance.
3. 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 students.
2. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.

3. Join external networks to share information and ideas.
4. Contribute to the School's outreach programme by establishing links with local community groups, industries etc.

ESSENTIAL CRITERIA:

1. Applicants must hold, or be about to finish before the interview, a PhD in experimental laser plasma interaction physics
2. At least 3 years of relevant research experience
3. Experimental experience in the area of intense laser plasma interactions
4. Experience in using PIC/Multiphysics codes
5. Strong publication record, commensurate to career level
6. Ability to provide support in management and administration.
7. Strong programming skills
8. Experience in writing research papers
9. Ability to communicate complex information clearly.
10. Ability to build contacts and participate in internal and external networks.
11. Demonstrable intellectual ability.
12. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. PhD work involving both experimental and computational studies of intense laser plasma interactions.
2. Experience in the use of EPOCH and VSIM code
3. Experience in high-intensity laser interaction with solid targets
4. Experience in writing proposals and reports.
5. Experience in visualization and post-processing of Particle in Cell data