

Candidate Information

Position:	Research Fellow
School/Department:	Centre for Quantum Materials and Technology (CQMT)
Reference:	23/110979
Closing Date:	Monday 12 June 2023
Salary:	£36,333 - £37,386 per annum
Anticipated Interview Date:	Monday 26 June 2023
Duration:	Fixed term until 30 November 2024

JOB PURPOSE:

To be an active member of the research team working on quantum technologies at Queen's University, undertaking theoretical research towards the exploration of non-equilibrium open quantum systems and processes and the characterisation of quantum transport and thermodynamics.

MAJOR DUTIES:

1. Develop and plan an area of personal research and expertise, and/or undertake research under supervision within a specific research project or as a member of a research team.
2. Design, develop and refine experimental apparatus, field research or experiments in order to obtain reliable data.
3. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to area of research.
4. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
5. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
6. Assist grant holder in the preparation of funding proposals and applications to external bodies.
7. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
8. 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.
9. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

ESSENTIAL CRITERIA:

1. Normally have or be about to obtain a PhD in theoretical physics.
2. At least 3 years' relevant research experience in theoretical physics, including at the postgraduate level.
3. Provable research experience in one or more of the following areas:
 - Quantum Optics.
 - Open system dynamics.
 - Non-equilibrium quantum processes and thermodynamics.
4. Ability to contribute to broader management and administrative processes.
5. Contribute to the School's outreach programme by links with industry, community groups etc.
6. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
7. Ability to communicate complex information clearly.
8. Ability to build contacts and participate in internal and external networks.
9. Demonstrable intellectual ability.
10. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. PhD in Theoretical Quantum Optics, Quantum Information Processing of Condensed Matter Physics.
2. Familiarity with the theory of quantum criticality, quantum optomechanics, and/or quantum control.
3. A substantial number of high-quality publications in international peer-reviewed journals (commensurate with the research experience).
4. Familiarity with the demands of quantum experiments at the mesoscopic scale.
5. Some experience in grant writing; willingness to support and complement the outreach activities of the group.
6. Numerical analysis/simulation skills.
7. Provide evidence of independence and the ability to manage a personal network of collaborations.
8. Proven ability to work in a group as well as ability/willingness to conduct/carry on a research activity with a relevant/some/certain degree of independence; some experience with research student supervision or willingness to co-supervise a research student.
9. Enthusiasm and willingness to establish new connections/collaborations.