

Research Role Profile

Job Title:	Research Fellow (1A)
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Responsible to:	Principal investigator
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Responsible for:	Not applicable
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Job Summary and Purpose:

To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

Main Responsibilities/Activities

To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, interviews, laboratory experimentation, critical evaluation and interpretation, computer-based data analysis and evaluation or library research.

Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.

Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity.

To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.

To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate.

The post holder may occasionally be required to supervise more junior research staff.

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Person Specification

The post holder must have:

A doctoral degree in a relevant discipline.

The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.

Relationships and Contacts

Direct responsibility to the principal investigator/head of group Dr Ginossar. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions.

Special Requirements

To be available to participate in Group/Team meetings and UK/Overseas meetings at partners institutions as required by the specified research project. To conduct theoretical research (by appropriate computational and analytical methods) that would contribute effectively to the success of the HiTIME project, under the guidance of the PI and in collaboration with the other project partners (BGU, Chalmers, Latvia, NPL). The post holder will be based at the University of Surrey at the Advanced Technology Institute. Additional responsibilities will include assisting the head of the group with supervision of students and occasional administrative tasks. We also provide opportunities for tutoring in physics department courses.

All staff are expected to:

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
- Help maintain a safe working environment by:
 - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
 - Following local codes of safe working practices and the University of Surrey Health and Safety Policy
- Undertake such other duties within the scope of the post as may be requested by your Manager.

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Addendum to Role Profile

Job Title:

Research Fellow (1A)

Job Summary and Purpose:

This information sheet should be read in conjunction with the accompanying generic Research RA1A Role Profile and will be used for shortlisting processes. More specifically the post holder will be expected to:

Main Responsibilities/Activities

- The researcher's main priority is to work on HiTime project as defined in the project proposal and work plan. The project is carried out at Surrey under the supervision of Dr Ginossar.
- The main role will be to theoretically study the electronic and electromagnetic properties of surface states of 3D topological insulators on the mesoscopic scale which are integrated with additional materials such as superconductors and metals forming hybrid devices. Topic of study will include electromagnetic response to THz/MW probes, effects of quantum confinement, bandgap calculations, adiabatic electron charge pumping, high coherence qubit applications.
- Work alongside colleagues within the programme to deliver theoretical predictions and analysis. Support our experimental partners at the collaboration.
- To work under the direction of the project supervisor and under your own initiative to deliver methods against agreed timeframes.
- To interact effectively with members of the research team including other group members (RAs, students).
- To undertake regular visits to collaborator groups as required by the project.
- To communicate or present research results within the research team and at external meetings.
- To prepare concise written reports on the progress of the research, and to participate in regular meetings with the project supervisors at which the direction of the research will be reviewed and planned.
- To assist in the preparation of publications.
- To assist in providing advice and training to other members of the project supervisors' research groups.
- To assist the PI in administrative tasks such as reporting and organising meetings and

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events.

Person Specification

The post holder must have:

- A Ph.D. in Physics (theory), and experience working with theoretical techniques of condensed matter physics.
- Good mathematical and computing skills.
- The ability and initiative to analyse complex problems;
- The ability to work as part of a multi-disciplinary team;
- A strong research track record, including academic publications, with respect to their current career position;
- The ability to prioritise and meet deadlines.

It is desirable that the post holder has:

- A relevant background in the physics of topological insulators, mesoscopic devices, transport and/or light-matter interaction in solid-state.
- Ability to construct and conduct effective numerical simulations.

Relationships and Contacts

The post holder will report and work under the guidance of Dr Eran Ginossar.