

Research Role Profile

<b>Job Title:</b>	Research Fellow (1A)
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<b>Responsible to:</b>	Principal investigator
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<b>Responsible for:</b>	Not applicable
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<b>Job Summary and Purpose:</b>
To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

<b>Main Responsibilities/Activities</b>
<p>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.</p> <p>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.</p> <p>Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity.</p> <p>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.</p> <p>The post holder may occasionally be required to supervise more junior research staff.</p>

## Research Role Profile

### Person Specification

#### The post holder must have:

A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration will also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years experience in specified / relevant fields

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 or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. 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 fieldwork as required by the specified research project and to carry out experimental work as required by the specified research project, to participate at the meetings as required by the specified research project.

#### 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.

## Research Role Profile

### Addendum to Role Profile

**Job Title:**

Research Fellow (1A)

**Job Summary and Purpose:**

The Surrey Space Centre at the University of Surrey is a world leading Centre of Excellence in Space Engineering, with a multidisciplinary competence that gives us a full end-to-end capability, unique in UK academia, to develop and execute space missions, from concept study to spacecraft design and Manufacturing Assembly Integration & Testing, to mission operations, which we run from our own ground station, and exploitation of space data.

The current opportunity is in the technical domains of Spacecraft Structures & Mechanisms, in the area of micro-vibration isolation platform.

We are seeking a researcher to work on a project in collaboration with our Industrial partner (SSTL from the UK and CSEM from Switzerland), and sponsored by the European Space Agency (ESA) and in order to maintain the academic work aligned with the sponsor's needs there is an expectation for the researcher to spend some periods of time at SSTL's premises. The ideal candidate will have either a degree (MEng level, with 2.1 degree classification or above, or equivalent national qualification - candidates holding a BEng degree could be acceptable depending on their profile) with some experience of design & analysis of spacecraft structures/mechanism, or a higher level degree (MSc or PhD) in Aerospace Engineering or related Engineering discipline/application, e.g. Aeronautical, or Mechanical or other relevant discipline/background, a keen interest in space structures, some experience in finite element analysis, a good understanding of structural dynamics (vibrations) and experience with vibration testing and data processing.

The specific objectives that will be achieved during the execution of the project are:

1. To design, analyse and refine/optimize a concept for the breadboard model to assess its capabilities prior to prototyping, & to prepare test and validation plans.
2. Manufacture and assemble a the single struts and perform repeated functional testing (e.g. isolation performance and local modes), critically reviewing results and impact on full prototype.
3. Manufacture and assemble the full prototype (including potential modifications resulting from the single element test activity) and perform repeated functional testing and desired environmental testing.
4. Evaluate the final design and both functional and environmental test results against original requirements.

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Research Role Profile

Main Responsibilities/Activities
<ul style="list-style-type: none"><li>- To develop the project undertaking basic research, making use of standard research techniques and methods, recording finding, and managing related activities.</li><li>- To conduct finite element analysis and subsequent update of the system design</li><li>- To assemble, integrate and test the partial and full breadboard</li><li>- To study the magnetic environment generated by the proposed technology</li><li>- To participate to meetings with the sponsor preparing all necessary material for the meetings (e.g. presentations, demonstrations, reports etc..) and as required by the sponsor in order to monitor the development of the project.</li><li>- To present the results of the research activity (in consultation with the industrial sponsor) at conferences and publish on relevant journals.</li><li>- To contribute to the preparation of research proposals.</li><li>- Any other duties as requested commensurate with the grade and nature of the post.</li></ul>

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### Person Specification

#### The post holder must have:

The candidate is expected to have a PhD or relevant experience, and good knowledge of Finite Element Method in the context of structural analysis of satellite and related test/analysis correlation methods.

The candidate is expected to have good knowledge of magnetic devices, structural analysis and testing procedures, as well as proficiency in engineering software like NASTRAN, COMSOL, Matlab/Simulink and Solidworks.

He should also be able to contribute in the bid and research proposal preparation and writing.

### Relationships and Contacts

The RA will directly report to the PI of the project and interact with the sponsor and other researchers in SSC as required..