

Research Role Profile

Job Title:	Research Assistant for Lunar In-Situ Resource Propellant Extraction
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Responsible to:	Head of research group, or principal investigator
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Responsible for:	There is no direct supervisory responsibility
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Job Summary and Purpose:
To support research activity in accordance with specified research project(s) under the supervision of the principal investigator

Main Responsibilities/Activities
To support a research team by contributing to the planning of research projects and undertaking prescribed research tasks in accordance with specified research project(s), making use of standard research techniques and methods. These may include fieldwork, interviews, laboratory experimentation, computer-based data analysis or library research as directed by the research award holder and will entail co-ordinating own work with that of others to avoid conflict or duplication of effort. Analysing and interpreting results of own research, under the guidance of research award holder or supervisor. Write up results and contribute to the preparation of 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. Continually update knowledge and develop skills To carry out routine administrative tasks associated with a specified research project, for example risk assessment of research tasks, organisation of project meetings and documentation. This will entail planning own day-to-day research activity within the framework of the agreed programme, dealing with problems that may affect the achievement of research objectives and deadlines and implementing procedures required to ensure accurate and timely formal reporting and financial control Demonstrating, or occasionally assisting with undergraduate supervision within the post holder's area of expertise and under the direct guidance of a member of the Faculty academic staff.

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Person Specification

The post holder must have:

A first degree or a professional qualification or equivalent in a relevant subject.

At least part-completed a relevant doctoral degree or have relevant experience in a given field.

Whilst there is no requirement for previous work experience, the post holder will be expected to be able to support research activities by performing experiments and/or undertaking studies and analysing/ interpreting results.

Relationships and Contacts

Direct responsibility to the principal investigator or academic supervisor.

Special Requirements

To be available to participate in fieldwork 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.

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Addendum

This document provides additional information relating to both specific aspects of the post/faculty and any post specific person specification criteria. The information contained within this document should always be read in conjunction with the accompanying generic Job Purpose.

Job Title:

Research Assistants for Lunar In-Situ Resource Propellant Extraction

Background Information/Relationships

This study delivers the first end-to-end assessment of magnesium sourced from lunar regolith as a viable propellant for a channel-less Hall-effect thruster, directly addressing the long-standing barriers that prevent metallic propellants from entering practical electric propulsion. Metals such as Mg are abundant and volatile, yet conventional Hall thrusters suffer severe condensation, plasma instability, and channel erosion when operated with condensable species. By removing the discharge channel, the proposed architecture enables stable operation and bypasses the mechanisms that usually limit testing and lifespan. The activity integrates five elements: (1) establishing realistic Mg availability across lunar mare and highland regolith and simulants; (2) producing purified Mg via MRE, carbothermal reduction, or vacuum pyrolysis; (3) characterising plasma behaviour and the baseline performance of the channel-less thruster using xenon/krypton; (4) developing a controlled condensable-metal feed system; and (5) mapping performance, impurity tolerance, and system-level impacts for ISRU-derived Mg propellant. Together, these steps provide the first experimentally grounded dataset connecting lunar extraction pathways to a functional thruster architecture, defining the feasibility envelope for metallic-propellant electric propulsion and enabling future lunar mobility and orbital logistics concepts that do not rely on Earth-launched propellants.

The Role and its Responsibilities

We are looking for two research assistants to conduct the following works.

1. Define the magnesium (Mg) resource envelope and representative feedstock: Establish realistic upper and lower bonds for Mg availability and select a representative reference feedstock or simulant for trade-off and limited laboratory investigation.
2. Comparative assessment and selected-route laboratory investigation of magnesium extraction: Identify the most viable extraction pathway for lunar application by comparing MRE, carbothermal reduction and vacuum pyrolysis, then obtain experimentally informed evidence for the selected route or its most critical recovery step.

Person Specification

This section describes the sum total of knowledge, experience & competence required by the post holder that is necessary for standard acceptable performance in carrying out this role. This is in addition to the criteria contained within the accompanying generic Job Purpose.

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Qualifications and Professional Memberships	Essential/ Desirable
Applicants will possess a relevant PhD or equivalent qualification/experience in a related field of social science.	D
Technical Competencies (Experience and Knowledge)	Essential/ Desirable
The successful applicant will have excellent research and communication skills (both written and verbal)	E
have experience of interdisciplinary research and make presentations at conferences and other events	E
The successful applicant will possess sufficient specialist knowledge to develop research programmes and methodologies.	E
Supervise the work of others and act as team leader as required	D
Applicants will be able to collect and analyse qualitative and quantitative data and write up findings in diverse formats for different target audiences.	E
Have experience in working with non-academic stakeholders and engaging in knowledge exchange activities	D
The successful applicant will have excellent research and communication skills (both written and verbal)	E
Special Requirements	Essential/ Desirable
Willingness and ability to work outside of regular office hours when required	E
Willingness and ability to travel to attend meetings held off University premises	E
Key Responsibilities This document is not designed to be a list of all tasks undertaken but an outline record of any faculty/post specific responsibilities. This should be read in conjunction with those contained within the accompanying generic Job Purpose.	

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1. To undertake a range of tasks related to the ACCESS program of work, in particular to analyse exiting data and help write project reports and papers for academic journals and non-academic outlets.
2. Take responsibility for planning, preparation, execution, and reporting of the research outputs ensuring deliverables across all partners are met according to research plan and collaboration agreement.
3. Attend ACCESS meetings and present findings to a wide range of stakeholders.
4. Liaise with the Surrey ACCESS Director (Principal Investigator) and co-investigators to ensure they are fully briefed at all times highlighting areas of resource concern as well as issues and actions relating to the ongoing status and successful completion of the project.
5. Work across different collaboration teams to contribute to the development of the research project establishing and maintaining relationships with key internal and external stakeholders.
6. Identify and establish collaboration opportunities for the development of the research project with industry, academic and government, matching needs and challenges of the research project.
7. Organise meetings, interviews and events within the remit of the research project.
8. Ensure alignment with research at Surrey as well as research across and operation activities and to support events and initiatives by working closely with the ACCESS Surrey director.
9. Liaise with COL's across the ACCESS team including the Surrey and Exeter program team.
10. Work closely, sensitively and collaboratively with a wide range of team members, project partners and stakeholders.

N.B. The above list is not exhaustive.