

Research Role Profile

Job Title:	Research Fellow in Energy Materials
Responsible to:	Head of research group, or principal investigator
Responsible for:	Not applicable

Job Summary and Purpose

To deliver research in accordance with the specified research project.

Main Responsibilities/Activities

To contribute to the development of the research of the Faculty, by planning and carrying out research activity within a specified area, often in collaboration with colleagues.

To take a significant role in planning, co-ordinating and implementing research programmes and, where appropriate, commercial and consultancy activities. To take lead responsibility for a small research project or identified parts of a large project. This may include planning fieldwork, data analysis and evaluation and laboratory experimentation. To make decisions about research programmes and methodologies, often in collaboration with colleagues, and to resolve the problems of meeting research objectives and deadlines. To develop new concepts and ideas to extend intellectual understanding. Assess, interpret and evaluate the outcomes of research, and develop ideas for the application of research outcomes. To take a role in the regular publication of results in appropriate journals, in giving presentations at national and/or international conferences, and in other outputs as required and/or appropriate.

Continually to update knowledge and develop skills. To extend, transform and apply knowledge acquired from scholarship to research and appropriate external activities.

To carry out management and administrative tasks associated with specified research funding, including managing and developing staff within their projects; risk assessment of project activities; organisation of project meetings and documentation; management of resources, preparation of annual reports, and management or monitoring of research budgets. To oversee and implement procedures required to ensure accurate and timely formal reporting and financial control.

To undertake liaison with external organisations including equipment manufacturers, steering committees, associated academic facilities and commercial users.

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Person Specification

The post holder must have:

Normally a doctoral degree in a relevant discipline, together with appropriate experience of working in a similar area of work.

The post holder will need to demonstrate a high level of competence and independent standing in research by being nationally recognised within their area of discipline, publishing regularly in recognised appropriate journals and attracting research funding for their own work or for other staff within the research group.

Relationships and Contacts

The post holder may have a key responsibility to the principal investigator, with prime responsibility for reporting and liaison with external funding bodies or sponsors. The post holder will also supervise the activities of PhD students and technician staff within the particular research group

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 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:

More specifically the post holder will become a research team member in the Electrochemical Energy Materials group in the Department of Chemistry (supervised by Prof John Varcoe and Dr Daniel Whelligan). The team's focus is the development of the next generation of ion-exchange polymer electrolytes for electrochemical technologies.

The team requires a dedicated researcher to develop novel anion-exchange membranes and ionomer powders specifically for application in CO₂ electrochemical reduction cells (CO₂ER). This role has arisen from the award of EU Horizon 2020 RIA funding for a project called SELECTCO₂ "Selective Electrochemical Reduction of CO₂ to High Value Chemicals" (project SEP-210572423), which is led by DTU Physics (Denmark) and involves multiple academic and industrial partners across Europe and the USA.

Main Responsibilities/Activities

The candidate will:

- Synthesise and characterise a new class of radiation-grafted anion-exchange membranes and ionomer powders for distribution to SELECTCO₂ project partners;
- Be fully engaged with all SELECTCO₂ consortium activities as required by the grant agreement and grant conditions. This will involve international travel within and outside the UK, along with outreach activities involving the wider public and school children;
- Assist in the production of intellectual property and/or high-impact papers for the benefit of both team members and the University of Surrey;
- Assist in the continuous synthesis of a stock of our standard benchmark radiation-grafted anion-exchange polymer electrolyte materials for distribution to third parties worldwide, to maximise impact and the production of joint high-quality publications;
- Assist with the supervision of students in the group (postgraduate, undergraduate,

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and overseas visitors).

Person Specification

The post holder must have:

Essential

- A PhD in Chemistry or Materials Science;
- Significant laboratory experience involving the synthesis and characterisation of functional solid-state materials (and their precursors);
- A proven track record of effective time management and multidisciplinary research, which has led to the production of high-quality research outputs.

Desirable

- Prior experience of polymer synthesis and characterisation, and/or the study of ion-conduction processes in polymeric materials;
- Prior experience of Raman spectro-microscopy and/or thermo-mechanical analyses.

Relationships and Contacts

The post holder will be line managed by Prof John Varcoe (principal investigator) and will be expected to work with direct team members and more widely across the University. The post holder is also required to be fully engaged with all relevant SELECTCO2 consortium members.