UNIVERSITY OF SURREY

Research Role Profile

Job Title:	Research Fellow A

Responsible to:	Head of research group, or principal investigator

Responsible for:	Not applicable

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.

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 may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years of 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

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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Research Role Profile

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:

Become a research team member in the Energy and Materials group in the Department of Chemical and Process Engineering. The team's focus is the development of the next generation of green hydrogen production based on novel energy materials and optimisation and application of advanced functional materials for energy conversion and storage processes.

The team requires a dedicated researcher to develop a dynamic model for a knovel hydrogen production process for studying its technoeconomic aspects compared to the available techniques. This project is funded by EPSRC-IAA grant 2021 'Technoeconomic Analysis for Hydrogen Energy, which also involves the CPE and Chemistry departments at the University of Surrey.

Main Responsibilities/Activities

The candidate will:

- Developing a dynamic model for a knovel hydrogen production process comprised of reactors, electrolysers, heat exchangers, and the other usual process unit operations; followed by a technoeconomic and sensitivity analysis of the system to optimise the operating condition for maximising the production rate and profit
- Be fully engaged with all consortium activities as required by the grant conditions and consortium agreement. This will involve scientific exchanges, meetings and outreach within the UK, and travel outside the UK (conferences, courses, meetings).
- 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, and overseas visitors).

Person Specification

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The post holder must have:

Essential

- A PhD in Chemical Engineering (we will also consider a Mechanical Engineering PhD degree holder if they have direct experience of electrochemical systems, dynamic process modelling and optimisation, for chemical/electrochemical processes);
- Significant technoeconomic analysis and process simulation experience involving process optimisation and process operation sensitivity analysis

Desirable

- Prior experience in Aspen Plus for dynamic modelling and optimisation of the electrochemical and chemical processes and their sensitivity analysis;
- Prior experience in technoeconomic analysis of hydrogen production processes.
- Prior experience in modeling the alkaline electrolyser and triple-phase reactive systems involving solid, liquid, and gas systems.

Relationships and Contacts

The post holder will be line managed by the 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 consortium members and collaborators.