

Job Description

Job title	Research Fellow
Department	WMG
Grade	FA6

<p>Job purpose (a brief summary of the role)</p>	<p>You will lead efforts and undertake research within a new Centre for Experimental Fuel Technologies – to grow our understanding around innovations in batteries & fuel cells. You will assist the Co-Investigators and Project Collaborators in the successful execution of the project. There will also be the opportunity to engage with a cohort of PhD students. Regarding the research there is some degree of flexibility in the areas of specialism sought from the successful candidate. WMG would however be particularly interested in the candidate being able to contribute to the areas of:</p> <p>Solid-state batteries, interfacial engineering and Li metal / anode-less batteries.</p>
<p>Duties and responsibilities</p>	<p>Research Duties and Responsibilities</p> <ol style="list-style-type: none"> 1. Design and develop components for solid-state batteries – electrolytes (polymeric, gel, ceramic or composite) – with opportunities to explore cell formats. 2. Develop and surface optimise Li metal anodes (or anode-less electrodes) for incorporation into solid-state batteries. 3. Develop and execute comprehensive electrochemical testing to generate high-quality data to underpin material and chemistry characterisation. 4. Where applicable apply interfacial / surface engineering to materials / electrodes to optimise stability of electrodes and electrolytes (using benchmark electrolytes as a baseline). 5. Use multiple-length scale characterisation (structural, chemical, imaging) to correlate structure-property-performance factors. 6. Supervise and train PhD students in their projects running in CEFT. 7. To establish a sound research base within the Department in order to pursue individual and collaborative research of high quality. This is consistent with making a full active research contribution to the Department in line with its research strategy. This includes high quality publication outputs. 8. To secure, in collaboration with colleagues as appropriate, external funding through research grants or contracts to support a developing research agenda. 9. To manage research projects within the University, which includes supervising post-doctoral research assistant, research students, technical and other support staff engaged in research. 10. To consider the value of research achievements within their potential commercial context and where appropriate and with the assistance of the Research Support Services, take appropriate action to protect such research results by patent application or copyright to the potential benefit of the University.

11. Where appropriate and expedient, to secure contract work to the benefit of (your) research activity and to provide resources to underpin this activity.
12. To publish research outcomes in appropriate journals of international standing and to publish and disseminate the result of research and scholarship in other reputable outlets, as well as providing timely reports.
13. To identify and explore with the Department and the University any entrepreneurial opportunities which may arise and to ensure that intellectual property rights are protected for the benefit of the University and the researcher.
14. To attend and present research findings and papers at academic and professional conferences, and to contribute to the external visibility of the department.
15. To contribute to the research plans developed by the Department, including providing such information as may be required by the Department to monitor the progress of each member of staff's research programme and to support the Department fully in the preparation of material required for the REF or similar activities.

Administration and Other Activities

16. To undertake such specific departmental roles and management functions as may be reasonably required by the Head of Department.
17. To attend departmental meetings and to participate (where necessary) in other committees and working groups within the department, the faculty and the University.
18. To participate in relevant professional activities.
19. To engage in continuous professional development.
20. To undertake external commitments, which reflect well and enhance the reputation of the University.
21. To ensure compliance with health and safety in all aspects of work.

Person Specification

The Person Specification focuses on the essential and desirable knowledge, skills, experience and qualifications required to undertake the role effectively. This is measured by (a) Application Form, (b) Test/Exercise, (c) Interview, (d) Presentation.

Essential Criterion No.	Essential Criterion Description	Measured by
E1	2.1 or equivalent in a relevant field (Chemistry, Materials Science / Engineering or Physics).	A
E2	Doctoral level qualification (e.g PhD or EngD) in a relevant discipline such as Materials Science, Chemistry (inorganic / organic), Physics or Electrochemistry.	A
E3	Extensive knowledge and demonstrated practical experience of electrochemical characterisation of energy storage devices. This would include writing of cycling protocol, EIS, incremental capacity / differential voltage analysis and diffusion measurements.	A,C & D
E4	Knowledge of the how electrochemical devices such as batteries age over time with respect to materials and electrochemical performance, and how these are related.	A,C & D
E5	Experience within electrode and battery fabrication (mainly coin or pouch).	A,C & D
E6	Knowledge and experience of physical and chemical characterisation techniques – XRD, XAS, XPS, SEM, SIMS with the willingness to learn other techniques.	A,C & D
E7	Good effective communication (oral and written) skills, presentation and training skills, with the ability to deliver outputs to national and international audiences.	A & C
E8	Good interpersonal skills.	A & C
E9	Ability to work independently and as part of a team on research programmes.	A,C & D
E10	Ability to initiate, plan organise, implement and deliver programmes of work to tight deadlines.	A,C & D
E11	Competency in IT and familiarity with a computerised environment.	A & C
E12	Ability to initiate, develop and deliver high quality research and to publish in peer reviewed journals.	A & C

Desirable Criterion No.	Desirable Criterion Description	<i>Measured by</i>
D1	Ability or potential to generate external funding (grants, contracts etc) to support research projects.	A & C
D2	Ability to write research reports and papers in styles accessible to both academic and policy audiences.	A & C