



Job Description

Research Fellow in Energy Materials

Department: Chemistry

Grade: 7

Location: UCL Bloomsbury Campus

Reports to: Dr Yang Xu

Context

The Chemistry Department

The Chemistry Department at University College London is the oldest in England, and today is one of the best in the UK, being ranked 2nd in the UK for the world-class impact of its research in REF(2014). We are located in Bloomsbury, at the heart of London, and offer an exciting and vibrant environment in which to study in one of the UK's top universities. The Department of Chemistry at UCL is committed to supporting excellence in both research and teaching. The department offers undergraduate BSc and MSci programmes in Chemistry and currently teaches 400 undergraduates registered in Chemistry as well as students who select Chemistry on the Natural Sciences programme and first year Chemistry for life scientists.

The Chemistry Department has over 50 members of academic staff carrying out world-leading research. We specialise in the areas of organic synthesis, chemical biology, computational chemistry, nanotechnology, inorganic and materials chemistry, physical chemistry and chemical physics. The department has an annual research income of around £15 million, derived from many sources including the Research Councils (EPSRC, BBSRC, MRC, and NERC), European Commission and a wide range of charities and industrial partners in the UK, Europe and the USA.

Details about our research can be found on the departmental website <http://www.ucl.ac.uk/chemistry>.

Main purpose of the job

The postholder will be required to carry out materials and electrochemistry research on calcium-ion batteries to understand the relationship between the low crystallinity of electrode materials and calcium-ion mobility in electrode materials, which includes the design and synthesis of materials, the control and characterisation of their crystallinity, the protocols for electrochemical evaluation, and the mechanistic investigation of electrochemical calcium-ion storage. The postholder will also be required to carry out a part of research work in collaboration with partners and present results to interdisciplinary researchers and a public audience.

This position is funded by the Leverhulme Trust. The position is for 12 months in the first instance with a possibility of extension.

Duties and responsibilities:

- To design synthetic routes to obtain electrode materials with a level of control on their crystallinity.
- To characterise the crystallinity of materials and investigate their battery performance.
- To develop protocols for electrochemical evaluation of calcium-ion batteries and mechanistic study.
- To record, analyse and write up the results of the research.
- To contribute to the drafting and submitting of papers to peer reviewed journals.
- To prepare progress reports on research for funding bodies as required.
- To contribute to the preparation and drafting of research bids and proposals.
- To contribute to the overall activities of the research team and department as required.
- To undertake a limited amount of teaching in relation to subject area.
- To contribute to the induction and direction of other research staff and students as requested.
- Responsible for ensuring that equipment is safe and maintained in working order.
- To liaise with project partners and present results to a range of audience.
- The job description reflects the present requirements of the post, and as duties and responsibilities change/develop, the job description will be reviewed and be subject to amendment in consultation with the post-holder.
- The postholder will carry out any other duties as are within the scope, spirit and purpose of the job as requested by the line manager.
- The postholder will actively follow UCL policies including Equal Opportunities and be expected to give consideration within their role as to how they can actively advance equality of opportunity and good relations between people who share a relevant protected characteristic and people who do not share it.
- The postholder will maintain an awareness and observation of Fire and Health & Safety Regulations.
- To be aware of and act upon:

Disciplinary procedure and disciplinary rules

Grievance procedure

Section 7 and 8 of the Health and Safety at Work Act

Person Specification

| Criteria | Essential or Desirable | Assessment method (Application/Interview) |
|--|------------------------|---|
| Qualifications, experience and knowledge | | |
| PhD (or about to be awarded a PhD) in Chemistry, Materials Science, Chemical Engineering, or a related area. | Essential | A |
| Experienced in inorganic battery materials synthesis (e.g., hydro/solvothermal, sol-gel, gas-phase deposition, etc.) | Essential | A |
| Experienced in characterising low-crystalline and amorphous inorganic materials | Essential | A |
| Experienced in electrochemical device fabrication and test | Essential | A |
| Experience in multivalent ion battery chemistries | Desirable | A/I |
| Experience of working in a research environment | Essential | A/I |
| Experience of multi-disciplinary working | Essential | A/I |
| Skills and abilities | | |
| Exceptional skills in battery research | Essential | A/I |
| Expertise in nanomaterials synthesis and structural characterisation | Essential | A/I |
| Willingness and ability to exchange information and materials with team members; internal and external contacts | Essential | I |
| Ability to work safely and effectively without supervision | Essential | I |
| Ability to analyse and write up data | Essential | A |
| Ability to present complex information effectively to a range of audiences | Essential | I |
| Effective written and verbal communication skills in English | Essential | I |
| Experience in supervising Master's students and designing research projects | Desirable | A |
| Personal attributes | | |
| Commitment to high quality research | Essential | I |
| Ability to work collaboratively and as part of a team | Essential | I |
| Self-motivated and able to act on own initiative | Essential | I |
| A strong publication track record | Desirable | A |

General Information

Terms & Conditions of Employment

The post is a UCL grade 7 post, the salary for which ranges from £36,028 to £43,533 per annum (including London Allowance of £3,211 p.a.). Starting salary is usually £36,028.

Please note, appointment at Grade 7 is dependent upon having been awarded a PhD; if this is not the case, initial appointment will be at Research Assistant Grade 6B (salary £31,542 to £33,257 per annum, including London Allowance of £3,211) with payment at Grade 7 being backdated to the date of final submission of the PhD thesis.

Progression through the salary scale is incremental. Cost of living pay awards are negotiated nationally and are normally effective from 1st August each year. UCL's non-clinical pay and grading structure is at http://www.ucl.ac.uk/hr/salary_scales/final_grades.php.

UCL's terms & conditions for research, teaching and professional services staff are at:

<https://www.ucl.ac.uk/human-resources/conditions-service-research-teaching-and-professional-services-staff>

The full range of benefits is at http://www.ucl.ac.uk/hr/benefits/employee_benefits.php

General information for Overseas Applicants

<https://www.ucl.ac.uk/human-resources/working-ucl/employment-contract-administration-team/immigration>

<https://www.ucl.ac.uk/human-resources/working-ucl/relocating-uk-guide>

Equal Opportunities

www.ucl.ac.uk/hr/docs/equal_opportunity.pdf

The Department has been awarded a Silver Athena Swan Award and we support the Athena beliefs that:

- The advancement of science, engineering and technology (SET) is fundamental to quality of life across the globe.
- It is vitally important that women are adequately represented in what has traditionally been, and is still, a male-dominated area.
- Science cannot reach its full potential unless it can benefit from the talents of the whole population, and until women and men can benefit equally from the opportunities it affords.

Further information on Athena Swan is at <http://www.athenaswan.org.uk/>

Apply

To apply for this position visit:

ucl.ac.uk/jobs

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