



**UNIVERSITY OF LINCOLN
JOB DESCRIPTION**

JOB TITLE	Post-Doctoral Research Associate in Innovative Battery-Grade Lithium Carbonate Production				
DEPARTMENT	School of Chemistry				
LOCATION	Lincoln Campuses				
JOB NUMBER	CHS052	GRADE	7	DATE	May 2024
REPORTS TO	Professor Yousef Ghorbani				

CONTEXT

A Post-Doctoral Research Associate (PDRA) position is now open within the research group led by Professor Yousef Ghorbani in the School of Chemistry at the University of Lincoln. This position is part of the large Horizon Europe project focusing on the Novel Domestic Battery-Grade Lithium Carbonate Value Chain for Green Life.

The University of Lincoln is pioneering a novel approach in the field of battery research and the processing of high-tech and critical raw materials, including energy elements and metals. We are seeking a highly motivated and enthusiastic Post-Doctoral Researcher to join our team and contribute to a cutting-edge research project funded by Horizon Europe – call: HORIZON-CL5-2023-D2-0 for novel domestic battery-grade lithium carbonate production.

Here at the University of Lincoln, we will be leading the Work Package (WP) on Green Chemistry based approaches for downstream processing to produce Li_2CO_3 . The primary objective is lithium extraction, purification, and of Li_2CO_3 production. Within this exciting project WP, and considering the complex nature of the selected lithium-bearing minerals, two different downstream processing approaches aligned with green chemistry will be applied: (i) Electrochemical-based processes, such as deep eutectic solvents (DESS) in combination with Electrodialysis (ED), and (ii) bioleaching. In addition, the study will also involve the application and development of cutting-edge analytical and characterization workflows.

The successful candidate will collaborate with a diverse, international team of 18 academics, research institute, and relevant industrial partners from different European countries and around the globe who are involved.

JOB PURPOSE

The Post-Doctoral Research Associate is responsible for conducting research on the project, as directed by the Principal Investigator, and is expected to operate with a significant degree of autonomy. They are not expected to operate as an independent researcher.

The post holder may be required to help supervise the work of more junior researchers.

KEY RESPONSIBILITIES

Literature Surveys

Undertake literature surveys and other investigations of the state-of-the-art, and prepare reports as required.

Programme of Research

Undertake a programme of research under the direction of the Principal Investigator, demonstrating a significant level of autonomy.

Lead in the production of high-quality research outputs, including reports, papers, and other publications of national/international standing.

Project Management

Perform project management activities, planning, scheduling, monitoring, and reporting on progress of research projects and work packages.

Liaison and Networking

Identify and liaise with internal and external collaborators, and with colleagues in the Department, maintaining positive and effective working relationships.

Internal Research Activities

Participate in and help to organise internal research activities, including seminars, research meetings and conferences.

Continuous Professional Development

Undertake continuous professional development activities.

Grant Applications

Contribute to the production of grant applications.

Teaching Support

Engage in teaching support activities, up to a maximum of six hours per week, possibly including leading a small number of units (no more than two per annum).

Aid in the supervision of postgraduate research students.

In addition to the above, undertake such duties as may reasonably be requested and that are commensurate with the nature and grade of the post.

ADDITIONAL INFORMATION

Scope and dimensions of the role

Applicants should have or expect to soon obtain a PhD in a relevant field (e.g., Chemistry, Material Chemistry, Chemical Engineering, extractive metallurgy).

The successful candidate will possess:

- Demonstrated expertise in both laboratory and theoretical aspects, particularly in innovative downstream processing, which includes the use of electrochemical methods and bioleaching while adhering to green chemistry principles.
- Proficiency in using analytical and characterization methods.
- A proven ability to collaborate with an international team of experts, fostering meaningful partnerships with academics, research institutions, and industrial collaborators.
- An established track record of scientific productivity demonstrated through peer-reviewed journal publications in the field.
- Excellent interpersonal skills and a strong aptitude for effective multidisciplinary teamwork.
- Demonstrated excellent written and spoken English communication skills.

The successful candidate will have the opportunity to develop their skills and knowledge in various areas, including:

- Developing and implementing downstream processing methods for lithium extraction, purification, and Li_2CO_3 production in accordance with green chemistry principles. This involves the use of electrochemical methods and bioleaching.
- Applying and advancing a wide range of state-of-the-art analytical and characterization techniques to support the project's objectives.
- Playing a key role in supervising the work of more junior researchers when necessary.
- Taking an active role in the laboratory's operations and mentoring junior lab members, including PhD and MChem students.
- Making a significant contribution to the scientific community by publishing research findings in reputable peer-reviewed journals and presenting their work at leading national and international conferences.
- Establishing valuable collaborations with esteemed international partners and working within a multidisciplinary team dedicated to this project.

Key working relationships/networks

Internal	External
<ul style="list-style-type: none">• Principal Investigator• Other research, technical and academic staff within the school• Undergraduate and postgraduate students	<ul style="list-style-type: none">• Research collaborators• Project partners from both academic and industrial sectors.



**UNIVERSITY OF LINCOLN
PERSON SPECIFICATION**

JOB TITLE	Post-Doctoral Research Associate	JOB NUMBER	CHS052
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Selection Criteria	Essential (E) or Desirable (D)	Where Evidenced Application (A) Interview (I) Presentation (P) References (R)
Qualifications:		
PhD or an equivalent degree in Chemistry, Material Chemistry, Chemical Engineering, extractive metallurgy (Exceptional candidates with a pending PhD or substantial industrial experience in the relevant fields will also be considered)	E	A
Experience:		
Experience in research related to electrochemical-based metal extraction	E	A/I
Authorship of research publications with national and international recognition	D	A/I
Demonstrated expertise in materials science and battery energy metals/elements	D	A/I
Proficiency in utilizing analytical and characterization methods	D	A/I
Experience in scaling laboratory processes for industrial production	D	A/I
Proven ability to collaborate with cross-disciplinary teams	D	A/I
Skills and Knowledge:		
Ability to design, conduct and project manage original research in the subject area	E	A/I
Excellent written communication, including the ability to write reports and research outputs	E	A/I
Ability to prioritise own workload and work to specified deadlines under pressure	E	A/I
Ability to communicate complex subjects orally	E	A/I
Proven ability to collaborate with cross-disciplinary teams	E	A/I
Competencies and Personal Attributes:		
Flexible approach to workload	E	I
Ability to work on own and as part of a team	E	I
Enthusiasm and commitment	E	I
Additional Requirements:		
Ability to travel and spend time at the project partners' universities in various European countries.	E	A/I

Essential Requirements are those, without which, a candidate would not be able to do the job.
Desirable Requirements are those which would be useful for the post holder to possess and will be considered when more than one applicant meets the essential requirements.

Author	Yousef Ghorbani	PBP	AH
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