

Exciting [Faraday Undergraduate Summer Experience \(FUSE\)](#) paid internship opportunities for summer 2024.

Studying a STEM degree? Wondering what career to pursue? Interested in finding out more about the battery sector? Keen to spend time with a dynamic community of pioneering battery researchers seeking to find solutions to support a fully electric future?

The Faraday Institution is offering a total of 55 internships, for undergraduate students working on battery related projects.

The Electrochemical Innovation Lab at UCL will host one intern placement within the CATMAT project.

Project title: Understanding Cracking Behaviour in Next Generation Battery Materials

Project description:

Understanding cracking behaviour in battery materials is crucial for comprehending degradation mechanisms. Cracking in battery materials can arise from both mechanical stresses during manufacturing and electrochemical processes during operation. However, accurately tracking operational cracking poses significant challenges, necessitating high-resolution 3D imaging techniques. This proposal aims to investigate electrochemically-induced cracking in cathode materials using X-ray nano-CT. By focusing on the delithiation process of LLMO/LNMO cathodes, we aim to unravel the electrode particle cracking development in these materials, correlating with the battery performance. This will provide insights into the battery degradation mechanisms and the design of more robust cathode materials.

In conducting the project you will:

- Understand the basics of battery and X-ray CT
- Understand battery cycling and electrochemical control
- Prepare the electrode for imaging
- Utilize X-ray nano-CT to image the electrode particles, characterizing both the pristine and charged state
- Analyse the CT data using Avizo

Supervisor: Dr Rhodri Jervis

University: University College London

Location: In-person

Start date: The internship is a full-time (36.5 hours per week) role for 7 weeks during June – September 2024. Start date is flexible, to be agreed with the project lead.

Eligibility:

- Be registered full-time undergraduate student from a UK university.
- Undertake the internship within the years of their undergraduate study (i.e., not in final year or during a subsequent Masters' programme).
- Not have been a FUSE intern in a previous year

Funding:

A salary of £12.00/ hour across the UK or £13.15 / hour in London will be provided. This will be determined by the working address of the appointee, not the university's location. The funding is provided by the [Faraday Institution](#).

You will be paid via the UCL recruitment agency [UniTemps](#).

Additional activities:

During the FUSE internship you will be able to attend Faraday Institution cohort events which will focus on a variety of topics to further develop your understanding of career opportunities in battery sector. At the end of the programme, you will be invited to to share a poster about your work and prizes will be awarded.

Application:

In order to apply for a Faraday Undergraduate Summer Experience (FUSE) 2024 internship, you need to send your CV to Lizzie Howie (l.howie@ucl.ac.uk) and complete the [survey](#). The deadline for applications is 26th April 2024

Diversity:

The Faraday Institution is committed to creating a dynamic and diverse pool of talent for the fields of battery technology and energy storage.

As London's Global University, we know diversity fosters creativity and innovation, and we want our community to represent the diversity of the world's talent. We are committed to equality of opportunity, to being fair and inclusive, and to being a place where we all belong. We therefore particularly encourage applications from candidates who are likely to be underrepresented in UCL's workforce.

You can read more about our commitment to Equality, Diversity and Inclusion here :

<https://www.ucl.ac.uk/equality-diversity-inclusion/>