

Exciting [Faraday Undergraduate Summer Experience \(FUSE\)](#) paid internship opportunities for summer 2023.

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 to spend 8-weeks working on battery related projects.

Project title: Chemical Imaging of Batteries

Project description:

In order to aid the transition to renewable energy and electrified transportation, it is vital for batteries to be able to provide higher energy densities, greater durability and increased lifetimes. To achieve these aims, researchers are focusing on an understanding of the physical and chemical mechanisms at play, applying advanced characterization techniques to help drive our understanding. [Finden](#) are developing novel chemical tomography characterization and data analysis techniques to enable the physicochemical structure of Li ion batteries to be studied. The internal chemistry can be directly observed inside intact batteries under operating conditions, providing unique insights into performance and degradation.

We are working with the Faraday Institutions Next Generation Cathode Materials Project, [FutureCat](#) at the University of Sheffield to understand how and why the novel cathode materials being developed there are better able to withstand prolonged cycling than current commercial materials.

We are seeking a highly motivated student to work with us in applying and benchmarking our novel methods (e.g. chemical segmentation algorithms, machine learning networks) to identifying and fitting experimental X-ray diffraction experimental data acquired on commercial Li ion batteries, and to apply these to the study of FutureCat's novel cathode materials.

Supervisors: [Dr Stephen Price](#), [Dr Innes McClelland](#), [Dr Beth Johnston](#)

University: [University of Sheffield](#) & [Finden Ltd](#)

Location: Remote

Start date: The internship is a full-time role for 8 weeks [Flexible 1 June – 30 September 2023].

Eligibility:

- Be registered as a 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 £10.90/ hour across the UK or £11.95 / 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](#).

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) 2023 internship, you need to fill in the Survey Monkey form via this link or the QR code below <https://www.surveymonkey.co.uk/r/FindenFUSE23> by **31st March**. Interviews will be online and are expected to take place 27th-28th April.



Diversity

The Faraday Institution is committed to creating a dynamic and diverse pool of talent for the fields of battery technology and energy storage. For further information see: <https://www.faraday.ac.uk/working-group-edi/>

The University of Sheffield, in accordance with the general intention of its Charter, confirms its commitment to a comprehensive policy of equal opportunities in employment in which individuals are selected and treated on the basis of their relevant merits and abilities and are given Equal Opportunities within the University.

The aim of this policy is to ensure that no job applicant or employee should receive less favourable treatment on any grounds not relevant to good employment practice. The University is committed to a programme of action to make this policy fully effective.

It is the University's policy as an employer to treat all people with dignity and respect, equally irrespective of any of the protected characteristics as defined by the Equality Act 2010. The protected characteristics are

- *age*
- *disability including mental health*
- *gender re-assignment*
- *marriage and civil partnership*
- *pregnancy and maternity*
- *race*
- *religion or belief*
- *sex and sexual orientation*

The University will not tolerate discrimination against employees on any of these grounds. The University's policy on the recruitment and employment of ex-offenders will also be taken into account. <https://www.sheffield.ac.uk/govern/equal-opportunities-policy>

<https://www.sheffield.ac.uk/inclusion>