

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: Li⁺ ion battery coin cell optimisation

Project description:

Understanding the long-term cycling behaviour of our developed cathode materials is at the core of the [FutureCat](#) project as we work towards the optimization of high Ni-content chemistries. While the current use of half coin cells (vs. Li metal) for material characterization is useful to understand initial cell characteristics (<100 cycles), Li metal anodes can complicate the understanding of cell degradation processes by confusing which electrode detrimental cycling effects arise from. Full cells (vs. graphite) are then placed as crucial characterization step before more advanced testing types, allowing a more detailed understanding of capacity retention at a lab scale. However, the intricacies of full cell assembly must be understood before reliable results can be obtained, with effects such as electrode alignment, active mass loading, and user assembly procedure all vitally important.

We are seeking a highly motivated student to aid in the optimization and understanding of graphite anode preparation and full cell assembly to provide knowledge of more reliable material characterization across the consortium.

This project will involve preparation of graphite anodes in the laboratory, followed by hands on experience of coin cell assembly and analysis of electrochemical data.

Supervisor: [Dr. Innes McClelland](#) and [Professor Serena Cussen](#)

University: The University of Sheffield

Location: *In-Person*

Start date: 1st of June with agreement between supervisor and student (flexible)

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 £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](#). *[Please amend if university has an agreed rate across all its internship programmes that is being matched – see grant letter for more details]*

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 complete the survey monkey application form by using the link or QR code below. We will be holding interviews 26th & 27th April online. They will be held online, and take about 15-20mins.

<https://www.surveymonkey.co.uk/r/coincell>



Diversity

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

For further information see: <https://www.sheffield.ac.uk/inclusion>