

**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:** Operando X-ray studies of Pouch Cells: Live studies of intercalation reactions in real cells

**Project description:**

The Research Pouch Cell Manufacturing and Phase 2 Degradation projects are focused on understanding how to improve performance in real cell formats as they cycle. Our projects focus on understanding the cell degradation mechanisms in an *operando* setting during cell cycling, i.e., without tearing them apart for post-mortem characterization. We employ X-ray diffraction to monitor the rocking-chair and staging mechanisms in NMC and graphite electrodes, respectively, along with directly probing the transition metal redox with X-ray absorption. These experiments are performed using novel in-house equipment for interpreting the electrochemistry. The FUSE internship project will work on optimizing the *operando* cycling and data collection protocols and analysing the results of *operando* XRD and XAS studies of our pouch cells. These activities will also give exposure to the battery manufacturing process at our battery scale-up pilot line at WMG. The intern will work with our PDRA/PhD researchers to study how cycle life, voltage limits and rates impact the intercalation processes within the cells.

**Supervisor:** Prof Louis Piper

**University:** University of Warwick

**Location:** In-person

**Start date:** The internship is a full-time role for 8 weeks between from June – September 2023

**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](#).

**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 out the form using the link: <https://forms.gle/FFRmf5M2CkHQPNNNA>

**Diversity**

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

Details about the University of Warwick EDI policies can be found in the two links below:

1. [Diversity and Inclusion \(warwick.ac.uk\)](https://warwick.ac.uk/edi/diversity-and-inclusion)
2. [Social Inclusion Group \(warwick.ac.uk\)](https://warwick.ac.uk/edi/social-inclusion-group)