

## **Exciting Faraday Undergraduate Summer Experience (FUSE) paid internship opportunities for summer 2025.**

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 48 internships, for undergraduate students to spend 8-weeks working on battery related projects.

**Project title:** Tracking electrolyte degradation by operando capture of volatile products

### **Project description:**

Electrolyte degradation is a significant contributor to poor cyclability in next-generation batteries. Identifying mechanisms of degradation is crucial for designing robust electrolyte solutions. However, existing methods to evaluate electrolyte degradation pathways are often limited to post-mortem assessment, narrowing our perspective to end of the line products. To better understand how electrolytes and their components fail, diagnosing the initiation reactions and subsequent pathways is essential. This project will focus on capturing volatile organic compounds (VOC) formed during battery cycling which will be analysed by gas chromatography mass spectrometry (GCMS) to map these degradation pathways. This will be achieved by use of an electrochemical flow cell which integrates into GCMS.

This project will be based at the University of Nottingham, working with the [Nottingham Applied Materials & Interfaces](#) (NAMI) group under the supervision of Prof. Lee Johnson and Dr Kieran Jones. The student will have exposure to research in the areas of next-generation energy storage while they will focus on demonstration and optimisation of this operando VOC capture method. The project will utilise flow and electrochemistry procedures outfitted with a sorbent or cryogenic trap to achieve this objective.

**Supervisor:** Prof. Lee Johnson & Dr Kieran Jones

**University:** University of Nottingham

**Location:** The internship is a full-time in-person role located at the University of Nottingham Jubilee Campus working in the GSK Carbon Neutral Laboratory & Research Acceleration Demonstration Building

**Start date:** The internship is a full-time role for 8 weeks, Starting early June 2025.

### **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 **£12.60** / hour across the UK or **£13.85** / 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 share a poster about your work and prizes will be awarded.

### **Application:**

In order to apply for FUSE 2025 internship, please send your CV (2-page maximum) and a brief letter (1-page max) describing your interest in the energy storage and battery technology fields, as well as what you are hoping to gain from this summer internship experience to [kieran.jones@nottingham.ac.uk](mailto:kieran.jones@nottingham.ac.uk) with 'FUSE 2025 – FutureCat' as the subject. The deadline for applications is April 25<sup>th</sup> 2025. Shortlisted candidates will be invited to a virtual interview within the two weeks following the deadline.

### **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 can be found at the following link:

[UoN Equality, Diversity and Inclusion – Policies and Information](#)