

**Exciting** [**Faraday Undergraduate Summer Experience (FUSE)**](https://www.faraday.ac.uk/fuse-internships-2023/) **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: F**orensic **A**nalysis of **B**atteries for early **F**ailure **M**odes – (**FAB-FM)**

**Project description:**

Early detection of failure modes in Li-ion batteries has become a critical need, as we continue to

manufacture larger battery formats. This will serve to maximize their inherent safety. But to do this

effectively requires a combination of scientific approaches to understand what is happening inside

the battery to cause it to lose power.

2 internships will learn about Li-ion battery testing and how we understand dominant degradation processes that cause them to lose their capacity. You will learn from WMG SafeBatt researchers how battery cells are fabricated, including creating smarter cells with reference electrodes to maximize useful data. At the end of a battery’s life, it is useful to take it apart and examine the electrodes to see how their chemistry and structure have changed. You will work with researchers to learn how to perform critical characterisation such as electron microscopy or X-ray diffraction, all focused on understanding the deterioration of battery performance.

**Supervisor:** Dr Mel Loveridge

**University:** University of Warwick

**Location:** *In-person with hybrid opportunities where required*

**Start date:** The internship is a full-time role for 8 weeks [July – September 2023].

**Eligibility:**

• Be registered full-time undergraduate student from a UK university, preferably undertaking physics, chemistry or materials science degrees.

• 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](https://www.faraday.ac.uk/).

**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.

This is an exciting opportunity to be part of a dynamic consortium focused on critical scientific understanding of safety in Li-ion batteries.

You will learn some valuable skills, critical for effective understanding of batteries – and get a taste of what battery research life is really like

There will be opportunities to be involved with disseminating the outcomes and great opportunity

to engage with other FI researchers at WMG.

You will be invited to some SafeBatt meetings, have the opportunity to participate and understand

what other SafeBatt partners are researching

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 a Faraday Undergraduate Summer Experience (FUSE) 2023 internship, you need to send your CV to [m.loveridge@warwick.ac.uk](mailto:m.loveridge@warwick.ac.uk). Please include a covering letter about what inspired you to apply for this internship, why the project is of interest to you and what you hope to experience during your time at WMG. Closing date is **9th June**.

**Diversity**

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

*University of Warwick: “Diversity aims to recognise, respect and value people’s differences to contribute and realise their full potential by promoting an inclusive culture for all staff and students. We understand that simply having diversity in our work force and student body is not enough; we must create an inclusive environment where everyone can excel.”*