**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:** Degradation Characterisation of Lithium-ion Batteries using Non-Destructive Ultrasonic Inspection

**Project description:**

Battery degradation affects performance in terms of the energy storage, cycling lifetime, and operation safety. Today, destructive methods are used to observe the electrode material failures, electrolyte changes, and internal structural deformations that lead to battery degradation. These are time/cost expensive and eliminate the possibility of incremental degradation analysis at multiple stages throughout a battery’s lifetime. Non-destructive methods present an exciting alternative.

This project will explore the use of ultrasonic inspection, a non-destructive technique developed in-part by the supervisory team. Ultrasonic inspection will be used to observe the internal structural changes of the battery during operation. Ultrasonic inspection can run in real-time, meaning changes to the battery’s internal structure during a single discharge are as easy to observe as structural changes across its entire lifetime.

You will have lab-based tasks and conduct your own analysis – work will be hands-on, and you’ll have opportunities to use new and exciting equipment/software.

**Supervisor: Dr. Alastair Hales and Dr. Jie Zhang**

**University: University of Bristol**

**Location: In-person (Queens Building, University of Bristol)**

**Start date:** The internship is a full-time role for 8 weeks, between 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](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. 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 [this application](https://forms.office.com/Pages/ResponsePage.aspx?id=MH_ksn3NTkql2rGM8aQVGz3NM8EtY0BCg6PnqmSzWQJUQVdMVkRJMkVRWEM3RkEwNVRIVE83V1U3Ri4u&wdLOR=c45A65369-3E8B-4401-A677-8C500E32095A) before 11:59pm on Sunday 16/4/2023.

**Diversity**

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

A commitment to equality, diversity and inclusion is fundamental to the University of Bristol’s core values, ensuring our success as a high-performing global civic institution with a positive and supportive culture, where all staff and students feel empowered and respected.