



NEXTRODE

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: Mechanofusion for lithium-ion battery cathode manufacturing

Project description:

Particle engineering is an important aspect to tailor the desired structure for active materials in designing next-generation lithium-ion battery cathodes. Mechanofusion is a high shear mixing process to coat larger particles with fines without the use of solvents. It is widely used in the pharmaceutical industry but relatively novel to battery manufacturing as a pre-processing step. The main challenge is the lack of an established relationship between process parameters (mixing time, mixing speed, blade gap) and properties of the particles produced.

This project will examine the nature of carbon coated active material under different mixing parameters and conduct basic characterization. There is also opportunity to examine the coating layer produced using cross sectioning microscopy techniques. This project will help to develop a mechanistic understanding of the mechanofusion process as a pre-processing step for electrode manufacturing.

Supervisor: Dr Denis Cumming

University: The University of Sheffield

Location: The University of Sheffield, Dept of Chemical & Biological Engineering, Sir Robert Hadfield Building - This intern is required to attend the lab in Person

Start date: The internship is a full-time role for 8 weeks. We are fairly flexible with our start and end dates, but are anticipating dates around 24th July - 15th 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 the 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 a Faraday Undergraduate Summer Experience (FUSE) 2023 internship, you need to apply by completing the short questions on this [form](#) before the 24th April, 2023. We will be in contact with those who are shortlisted to conduct a short interview.

Diversity

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

[Equality, Diversity and Inclusion Policy for students | Study at Sheffield | The University of Sheffield](#)