



The next generation in sodium-ion batteries

Exciting [Faraday Undergraduate Summer Experience \(FUSE\)](#) paid internship opportunities for summer 2022.

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

Project title: Operando characterisation of Na-ion battery electrode materials

Project description:

The Faraday Institution's Nexgenna project is accelerating the development of sodium-ion battery technology by seeking to improve understanding of key processes, from fundamental chemistry right through to scale-up and cell manufacturing. Of key importance is an improved understanding of the processes that occur inside batteries as they are charged and discharged repeatedly over time, and how these affect performance degradation during the lifetime of a commercially-relevant cell. In this project, you will learn how to assemble cells then collect X-ray diffraction data *during cell cycling*, without pausing the cell, using our state-of-the-art facilities at the University of Sheffield. We will provide high level training on this and how to then analyse the diffraction data, so that we can better understand the phase and/or structural changes involved in the active electrochemical processes in leading candidate electrode materials for the next generation of batteries.

The successful candidate would benefit from being computer literate and used to working with some level of scientific software. Prior experience of X-ray diffraction would be beneficial but by no means essential as you will work alongside an experienced team who can provide training in all aspects necessary to complete the project successfully.

Supervisor: Dr Nik Reeves-McLaren

University: University of Sheffield

Location: In person

Start date: The internship is a full-time role for 8 weeks during June – September 2022.

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 £9.90 / hour across the UK or £11.05 / 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](#).



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Additional activities:

During the FUSE internship you will be able to attend Faraday Masterclasses and 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) 2022 internship, you need to send your CV and a one-page cover letter to the project supervisor directly, via email to n.reeves@sheffield.ac.uk before 5pm on Thursday 31st March 2022.

Diversity

The Faraday Institution is committed to creating a dynamic and diverse pool of talent for the fields of battery technology and energy storage. At the University of Sheffield, we build teams of people from different heritages and lifestyles from across the world, whose talent and contributions complement each other to greatest effect. We believe diversity in all its forms delivers greater impact through research, teaching and student experience.