

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: Identifying the unique risks posed by thermal runaway of Li-ion batteries in rail and marine applications - a qualitative risk assessment

Project description:

- The need to decarbonize the rail and marine sector is leading to increased interest and utilization of Li-ion batteries (LIBs) in these sectors for use as stand-alone and hybrid primary power systems and also auxiliary power systems. However, the electrical, mechanical and environmental demands put on LIBs in these sectors are different to that of existing automotive EV and stationary batteries
-
- The aim of this work will be to carry out literature review to determine the unique hazards LIBs face when applied to rail and marine applications. How these hazards could influence the occurrence of thermal runaway events and what unique hazards thermal runaway poses in these applications. An analysis of these hazards will be used to develop a qualitative risk assessment posed by thermal runaway in these applications.
-

Through the qualitative risk assessment, factors that present the most risk will be identified and recommendations on their mitigation presented.

Learning Objectives:

- Understand what safety engineering is and the different methods of risk assessment
- Understand how batteries are constructed and work on a system level, the issue of thermal runaway, and how different battery applications influence battery design and engineering requirements.

Additional Information:

- Background in Engineering, Physics or similar discipline ideal.

Supervisor: Prof. Solomon Brown, co-supervised by Dr Peter Bugryniec

University: The University of Sheffield

Location: In-person (remote/ hybrid possible)

Start date: The internship is a full-time role for 8 weeks from 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](#).

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 the following [SURVEY](#), and send a CV to Prof. Solomon Brown (s.f.brown@sheffield.ac.uk) by 5th May 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.

You can read more about our commitment to Equality, Diversity and Inclusion here:

<https://www.sheffield.ac.uk/study/policies/equality-and-diversity-policy>
<https://www.sheffield.ac.uk/study/policies/equality-and-diversity-policy>