

**Exciting [Faraday Undergraduate Summer Experience \(FUSE\)](#) paid internship opportunities for summer 2026.**

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

**Project title:** *Digital Twin Enabled Investigation of Thermal Behaviour and Gas Venting during Battery Thermal Runaway*

**Project description:**

Thermal runaway (TR) remains a critical safety challenge in lithium-ion battery systems at the battery pack level. Venting gas accumulation and thermal propagation during TR can trigger severe hazards, including fire and explosion. Large amounts of combustible gases are vented, and their transport in confined battery pack spaces is governed by coupled temperature and flow fields. Digital twin modelling integrates experimental data with physics-based models for battery safety assessment and design and is gradually being incorporated into battery safety regulations and technical standards as a complement to experimental testing.

This project primarily focuses on numerical simulation and employs thermal imaging techniques to characterize the spatial distribution of temperature fields during TR events. Accelerating Rate Calorimetry (ARC) testing will be applied to calibrate and validate numerical models describing transient thermal evolution. Using validated thermal models, computational fluid dynamics (CFD) simulations will be conducted to investigate the flow field and spatial distribution of flammable gases within battery pack enclosures, with particular attention to gas concentrations relative to the lower flammability limit. The outcomes of this project will provide quantitative insight into coupled thermal and fluid mechanisms during battery TR and support battery pack safety design, and thermal hazard mitigation.

**Learning objectives:**

- Develop a deep understanding of battery thermal runaway and its propagation behaviour.
- Acquire knowledge of key experimental methods in battery safety research and contribute to related experimental work.
- Perform Multiphysics simulation modelling and key parameter sensitivity analysis.
- Strengthen scientific communication skills, including technical writing and oral presentation.

**Supervisor:** *Dr Zeyu Sun, Prof. Paul R. Shearing*

**University:** *University of Oxford*

**Location:** *Hybrid*

**Start date:** Full-time for 8 weeks during summer 2026 (exact dates to be agreed)

**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 £13.45/ hour across the UK or £14.80/ 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 share a poster about your work and prizes will be awarded.

**Application:**

In order to apply for a Faraday Undergraduate Summer Experience (FUSE) 2026 internship, you need to *submit a CV not exceeding 2 pages and a statement letter not exceeding 1 page. Applicants should possess basic knowledge of lithium-ion batteries and heat and mass transfer, experience in the numerical simulation of thermal and fluid problems, particularly conjugate heat transfer, and prior experience with commercial simulation software (e.g., ANSYS Fluent, COMSOL Multiphysics, and STAR-CCM+).*

*Please also complete this [survey](#) so we can keep you informed about future Faraday opportunities, including other FUSE internships that may need additional support with recruitment.*

*The deadline for applications is May 1st, 2026. Shortlisted candidates will be invited to a virtual interview within two weeks following the deadline.*

**Diversity**

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