Exciting Faraday Undergraduate Summer Experience (FUSE) paid internship opportunities for summer 2024.

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? Want to participate in a exciting and dynamic research group culture at King's College Department of Engineering for your summer 2024?

The Faraday Institution is offering a total of 55 internships, for undergraduate students to spend 8-weeks working on battery related projects.

Project title: Database for fire modelling of Li-Ion batteries

Project description:

Abuse of lithium-ion batteries can lead to thermal runaway, a catastrophic exothermic failure mode where the battery materials thermally decompose, releasing large amounts of heat. Thermal runaway is usually accompanied by combustion of the vented decomposition gasses and sometimes explosions. Modelling the thermal and fire behavior of batteries during the decomposition process is paramount to understand how thermal runaway will propagate and to predict the effects the released heat will have on the surrounding environment. This can be done utilizing state-of-the-art modelling facilities including COMSOL and CFD modelling software. However, such models require a wide range of input parameters which can either be measured experimentally or extracted from the literature. The focus of this project will be to create an accessible database for a wide range of batteries considering chemistries, size, capacity, and state of charge. The database will be a useful tool for battery fire modelling.

Our group at King's College London, in the Department of Engineering, is working on CFD modelling of the flame, the student will have a chance to discuss computational simulations of fire with our researchers. If the student is keen and has a background in fluids dynamics, they would have the chance to learn about the tools and models available for fire modelling, and can learn more about our group at https://heatandfire.github.io/ .

Supervisor: Dr Francesco Restuccia & Francesca Lugaresi

University: King's College London

Location: In-person

Start date: The internship is a full-time role for 8 weeks, June – August 2024

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 £12.00/ hour across the UK or £13.15 / 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) 2024 internship, you need to complete the application at: *https://forms.office.com/e/CRL4RN3E2j*

The application deadline is April 17th, 2024, at 23:59.

You will be informed of the outcome of the application by April 23rd.

Diversity:

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

We particularly welcome applications from members of under-represented communities, and from those who are willing to contribute to our ongoing conversations about reducing inequality at King's.