

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: Hopping through the interfaces: a multiscale chemo-mechanics model for solid-state battery energy materials

Project description:

Mechanical damage arising from electrochemical processes in solid-state batteries can alter significantly their mass transport capability and thus their overall performance. The damage is frequently initiated at internal interfaces at the microscale, subsequently disrupting ionic and electronic conductivity paths. The effect of mechanical damage at interfaces on the mass transport and overall battery performance is not yet fully understood.

This summer project will assist in the development of a predictive and physically-sound chemo-mechanical model that describes the link between interfacial damage and ionic transport in solid-state battery materials. The model will link micro and macro battery length scales, and will be implemented within a non-linear finite-element approach. It will be applied to study interface damage between active particles and surrounding materials within a solid-state battery cathode. The model will ultimately assist in the design of interfaces and electrode materials with improved resistance to mechanical damage for solid-state batteries.

Supervisor: Lukasz FIGIEL

University: University of Warwick

Location: *University of Warwick; Mode of delivery: HYBRID*

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



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 Personal Statement (including an explanation of why you would like to embark on this internship opportunity, and some information about your background) and CV to l.w.figiel@warwick.ac.uk.

The deadline date for applications is April 14th.

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 concerns every member of our community at the University of Warwick. At Warwick, it is expected that everyone contributes to ensure the University continues to be a safe, welcoming and productive environment, where there is equality of opportunity, fostered in an environment of mutual respect and dignity. For more information, go to our dedicated Diversity and Inclusion webpages <https://warwick.ac.uk/services/equalops>.