

Exciting [Faraday Undergraduate Summer Experience \(FUSE\)](#) paid internship opportunities for summer 2025.

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.

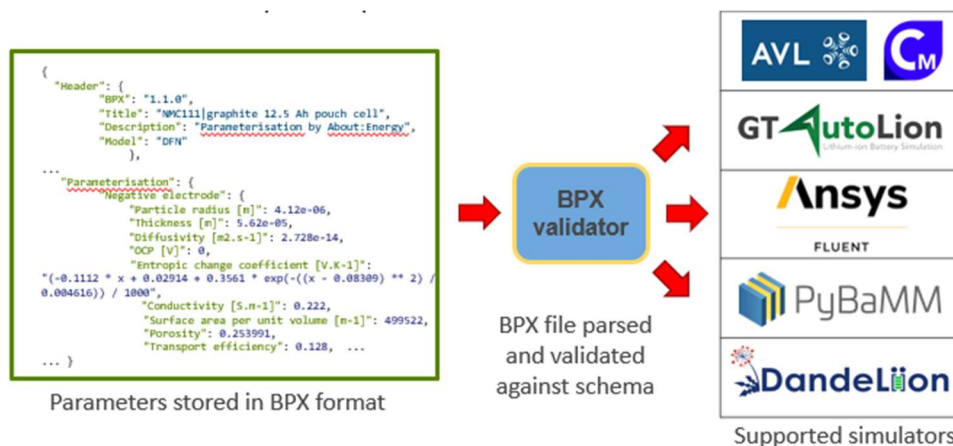
Project title: *Demystifying model parameters through a BPX Parameter Explorer app*

Description

The battery simulation landscape is fragmented, with many users running custom implementations of models. Battery Parameter eXchange (BPX) addresses this problem by providing an open standard for physics-based Li-ion battery models, thus consolidating and communicating research outputs.

BPX provides a standardised set of equations and parameters, and a JSON schema for expressing them. It is supported by parameter descriptions detailing how the parameters can be derived from physical battery cells. BPX aims to reduce fragmentation and support interoperability and data exchange. The standard makes it easier for established manufacturers, startups and innovators to access and leverage the insight provided by physics-based models across a broad range of development scenarios. The Faraday Institution supports BPX with the expectation that in the medium term it will become an independent industry standard maintained by its users.

BPX has been developed to reduce costs and time-to-market through a common definition of physics-based battery models that can be used and shared widely across industry. As industrial interest increases, BPX has gained support from multiple simulators, including AVL CRUISE M, Gamma Technologies AutoLion, Ansys Fluent, PyBaMM and Dandelion. The first version of the BPX standard was released in July 2025, with a core set of models consisting of the DFN, SPM and SPM_e models. Further work to expand the standard to cover experimental parameter determination and degradation models is under way.



Schematic representation of BPX in use.

As the successful candidate, you will become part of the BPX team for 8 weeks and have the opportunity to gain an understanding to how physics-based battery models are constructed and used for real-world applications in the automotive industry. This industrially-oriented FUSE is particularly suited to someone with a broad interest in battery design, modelling and applications.

You will have the opportunity to contribute in one or more of the following areas:

- Improve and debug the “BPX Explorer” tool, a prototype of a python GUI-based application to create, edit, visualize and validate BPX files.
- Help draft the next release of the standard (PDF document)
- Action GitHub issues and pull requests
- Expand the standard by adding new features to BPX
 - physics-based models
 - generalise equation set to 3 dimensions
- Write application examples

Learn more:

Website <http://www.bpxstandard.com>
BPX standard (PDF) <https://bpxstandard.com/download/657/?tmstv=1775839370>
GitHub <https://github.com/FaradayInstitution/BPX>

Successful applicants will have:

- A strong interest in lithium-ion batteries and how they work
- Solid coding skills in Python and be keen to work autonomously under supervision
- Fundamental notions of electrochemistry and partial differential equations
- An interest in learning about physics-based modelling of lithium-ion batteries
- Working knowledge of writing in LaTeX and Overleaf

Supervisor: [Dr Carlos Garcia](#) and [Pete Keevill](#)

University: Imperial College London

Location: South Kensington campus, London

Mode: in person or hybrid

Start date: The internship is a full-time role for 8 weeks and must end by 29 August 2026.

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: The funding is provided by the [Faraday Institution](#) and subject to the host institution rates. A tax-free stipend of up to £3600 (£12.85 / h London rate) will be provided. This will be determined by the working address of the appointee, not the university's location.

Additional activities: During the FUSE internship you will be invited 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 expected to produce a poster about your work. The Faraday Institution will award prizes to the best posters.

Diversity: The Faraday Institution is committed to creating a dynamic and diverse pool of talent for the fields of battery technology and energy storage. Tackling the global challenges of the future, such as climate change, will require a truly diverse, creative approach. For [Imperial](#) to be at the forefront of this effort, we draw upon the talents of staff and students who come here from all backgrounds and from all over the world.

Submit your application:

Applications to this project must be submitted online. Interested candidates are encouraged to apply early. Applications submitted after the deadline will not be considered unless the position has not been filled.

Deadline: Sunday 26 April 2026

APPLY HERE: <https://forms.office.com/e/KG4ND6MQBj>



The outcome will be communicated by 11 May 2026 to the email address entered in the application.

Survey

The Faraday Institution kindly asks that you 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.

