RESEARCH STUDENTSHIP

All studentships are highly competitive, and you should ensure (and demonstrate) that there is a good match between your own qualifications and interests and those being sought for the particular studentship.

Research School where studentship will be held	School of Chemical and Physical Sciences
Studentship reference	FNS_FACSCPS2026
Web link to any further information (e.g. Research Institute/School/Faculty)	Bala Materials Lab Morbec Materials Modelling Group School of Chemical and Physical Sciences Advanced Materials Technology and Engineering Centre
Research topic or field - title	Research field: Energy Storage Title: Design-Make-Test-Learn of Interfaces and Electrolytes for High-Performance All-Solid-State Energy Storage Devices
Research topic or field full description (or attached document).	All-solid-state batteries (ASSBs) offer major advantages in safety, energy density and operating temperature over conventional lithium-ion batteries, but their development is limited by poor ionic conductivity, unstable electrode-electrolyte interfaces and manufacturing challenges. This PhD project will address these challenges using a **design-make-test-learn** strategy that integrates **computational materials modelling** with **experimental synthesis, characterisation and device fabrication**. The research aims to establish robust design rules linking electrolyte chemistry, defects, interfaces and chemomechanical properties, and to demonstrate high-performance ASSB devices operating at room temperature.
Expected start date	September 2026
Mode of attendance	Full-time
Funding support available – Fees, stipend, duration	**Fully funded** This 3-year PhD studentship includes full tuition fees at UK level (international fee waivers may be considered), an annual doctoral stipend at UKRI rate, Research and travel budget (~£3,000 per year), and access to advanced laboratories, characterisation facilities, and HPC resources. Students are also provided with access to Faculty research training funds for research-related expenses, including - but not limited to - conference attendance, external training courses and UK fieldwork.
Source of funding	Faculty of Natural Sciences, Keele University

Eligibility criteria	Applicants should have (or expect to obtain) a **first-class or strong upper second-class degree** in Physics, Materials Science, Chemistry, Chemical Engineering, or a closely related discipline. Please see below for information.
Terms and conditions of studentship	As per the University Code of Practice
Number of studentships available	1
Application details	Please go to http://www.keele.ac.uk/pgresearch/studentships/ and click on the "Apply online here" button in this studentship. **Please quote FNS_FACSCPS2026 on your application.**
Closing date for applications	29th May 2026
Contact for further information and to whom applications will be sent	Dr Nilanthy Balakrishnan (n.balakrishnan@keele.ac.uk) Dr Juliana Morbec (j.morbec@keele.ac.uk)

Candidate profile

	Essential	Desirable
Qualifications, Experience and Skills	An undergraduate degree in Physics, Materials Science, Chemistry, Chemical Engineering, or a closely related discipline with a **first-class or strong upper second-class** Interest in energy storage, solid-state ionics, polymers, interfaces, or computational modelling Strong motivation for interdisciplinary research.	A postgraduate qualification in Physics, Materials Science, Chemistry, Chemical Engineering, or a closely related discipline. Experience in materials synthesis, electrochemistry, or battery research. Experience or interest in computational modelling (DFT or simulations). Willingness to work across theory and experiment.
Attitude and Personality	Effective communication (oral and written) skills, presentation and training skills. Good interpersonal skills. Ability to work independently and as part of a team on research programmes. Ability to initiate, plan, organise, implement and deliver programmes of work. Willingness to learn new skills.	

Keele University values diversity,and is committed to ensuring equality of opportunity. In support of these commitments, Keele University particularly welcomes applications from women and from individuals of black and ethnic minority backgrounds for this post. More information is available on these web pages:

https://www.keele.ac.uk/equalitydiversity/

https://www.keele.ac.uk/athenaswan/ https://www.keele.ac.uk/raceequalitycharter/disabilityconfident/