

Advanced Rechargeable Batteries Technology

Rechargeable batteries, as electrical energy storage devices, will play a pivotal role in mitigating climate change and supporting the New Zealand government's Zero carbon emission targets. However, current commercial rechargeable battery technologies are not ideal for marine renewable energy storage and improving the sustainability/resilience of marine industries.

The Advanced Energy Storage Research Group at the University of Auckland (UoA) is offering two PhD research scholarships to outstanding candidates to develop high-performance rechargeable seawater batteries. Specific project objectives include:

- Develop advanced electrode materials for rechargeable seawater batteries.
- Design and fabricate battery cells and evaluate their performance.
- Investigate the battery charge/discharge mechanisms and the reaction interface.

The Scholarships are funded by a grant from the Ministry of Business Innovation and Employment (MBIE) Endeavour Fund. The principal Investigator Dr. Shanghai Wei is from Department of Chemical & Materials Engineering in the Faculty of Engineering at the University of Auckland. The successful PhD candidates will be supervised by Dr. Shanghai Wei and co-investigators from School of Chemical Sciences at the UoA, GNS Science and Georgia Tech (USA).

Scholarship:

Value: \$37,238 p.a. tax free for 3 years of full-time study.

The award will cover the tuition fees at the University of Auckland, plus a stipend of NZ\$29,100 per annum (tax free) for 3 years. This scholarship will also cover student services fees and international health insurance (if applicable).

Selection Criteria:

This scholarship is open to all domestic and international students.

A successful candidate should demonstrate a strong research background in one or more fields that include:

- Electrochemistry
- Materials chemistry
- Chemical Engineering
- Material science and engineering
- Mechanical Engineering

Additional skills and preferred attributes include, a) Experience in battery chemistry, and/or advanced materials characterisation; b) Motivation to explore new battery energy storage technologies; and c) Experience of working with data analysis and academic writing. Applicants from Māori or Pasifika communities are strongly encouraged to apply.

How to apply:

Candidates should submit an expression of interest, including a CV and supporting statement outlining their skills and interests in battery research area, to Dr. Shanghai Wei (s.wei@auckland.ac.nz).

If this initial application is successful, we will invite you to make a formal application for studying PhD programme at the University of Auckland. All candidates must fulfil the [University of Auckland entry criteria](#).

APPLICATIONS are open from 10 Nov 2022 until all places are filled.

About the University of Auckland

The University of Auckland is a research-intensive and comprehensive university located in Auckland, which is ranked third out of 230 world cities for quality of living in the 2019 Mercer Quality of Living Survey (see <https://mobilityexchange.mercer.com/insights/quality-of-living-rankings>).

The University of Auckland is New Zealand's highest-ranked university (87th in 2023 QS Rankings and 139th in 2023 Times Higher Education Rankings). The Faculty of Engineering has a strong and innovative vision for the future, delivering learning and research excellence to enable our students to thrive and succeed and become graduates who make a positive impact on their community and world around them.