POSITION DESCRIPTION

THE UNIVERSITY OF MELBOURNE

School of Chemical and Biomedical Engineering
Faculty of Engineering and Information Technology

Research Associate in Li-ion Batteries

POSITION NO	0058444
CLASSIFICATION	UOM 8
SALARY	$110,709 - $119,829 p.a.
SUPERANNUATION	Employer contribution of 17%
WORKING HOURS	Full-time
BASIS OF EMPLOYMENT	Fixed Term until 4th of March 2024 *Applications for part-time or other flexible working arrangements will be welcomed and will be fully considered subject to meeting the inherent requirements of the position*
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits
HOW TO APPLY	Online applications are preferred. Go to http://about.unimelb.edu.au/careers, select the relevant option ('Current Opportunities' or 'Jobs available to current staff'), then find the position by title or number.
CONTACT FOR ENQUIRIES ONLY	Professor Amanda Ellis Email: amanda.ellis@unimelb.edu.au *Please do not send your application to this contact*

For information about working for the University of Melbourne, visit our website:
about.unimelb.edu.au/careers

Acknowledgement of Country

The University of Melbourne acknowledges the Traditional Owners of country throughout Australia. The University recognises the unique place held by Aboriginal and Torres Strait Islander peoples as the original custodians of country and their continued connection to the land, waterways, songlines and culture. The University respects all Aboriginal and Torres Strait Islander People and warmly embrace those students, staff, Elders and collaborators who identify as First Nations.

Commitment to Diversity and Inclusion

The Faculty of Engineering and Information Technology (FEIT) is committed to creating a diverse and inclusive environment that welcomes and values all people. We recognise that diversity is essential in contributing to the success of FEIT. Women, Aboriginal and Torres Strait Islanders, the LGBTIQ+ community, people living with disability and those from a culturally and linguistically diverse background, are strongly encouraged to apply. Those seeking support in submitting an application are welcome to contact the Faculty HR team at feit-hr@unimelb.edu.au

Position Summary

In this position you will play a pivotal key role in our collaborative research project between industry partners and CSIRO, QUT and The University of Melbourne. The Super Anode Project is based within the Cooperative Research Center for Future Battery Industries. Our research aims to develop improved methods for the spheronisation and coating of natural graphite and the preparation of graphite:silicon anodes, as well as investigate avenues for up-scaling of these processes.

The candidate should be familiar with Li-ion cell chemistry and have experience in spheronisation of graphite and/or thermal processing of carbon-based materials. This candidate will be a key member of a cross functional team. This role includes spheronisation of graphite, carbon coatings, thermal treatment on a large scale of carbon-based materials and data analysis.

In this role you and will produce quarterly progress reports, interact with our research collaborators and industry partners, and where appropriate, publish your outcomes in peer reviewed journals. You will be specifically involved in the day-to-day operation of a research lab, including maintaining stocks of routine supplies, chemical safety documentation and inductions and co-supervising undergraduate and PhD research students. When required you may also undertake teaching and research supervision directly related to your area of research.

You will be an active member of CBE collaborating with other researchers across the project. Your strong interpersonal skills will be imperative in assisting you to form productive working relationships with key stakeholders internally and with our Industry partners.

1.1 ESSENTIAL

- PhD in chemical engineering, chemistry, physics, nanotechnology or materials science
- Experience in working with silicon and graphite and the fabrication and characterisation of composite anodes for lithium-ion batteries
- Experience in Li-ion full coin cell and pouch cell fabrication, including anode and cathode electrode coating and cell assembly and familiarity with quality control methods used to evaluate the repeatability of assembly processes
- Demonstrated project management and report writing skills
- Experience in combining information from many different analytical tools in pursuit of the solution to important problems in anode processing.
- Demonstrated ability to manage competing priorities and excellent time management skills.
- Outstanding communication skills, both oral and written.
- Demonstrated ability to work co-operatively in a multi-disciplinary team environment and liaise with associates from diverse backgrounds.
- Demonstrated commitment to the highest levels of health and safety
- Desire to work on industry related research.

1.2 DESIRABLE

- Deep knowledge of anode failure mechanisms during cycling
- Familiar with MATLAB, Python, and/or similar data analysis tool

2. Key Responsibilities

The position description should be read alongside the Academic Career Benchmarks.

2.1 RESEARCH AND ADVANCEMENT OF DISCIPLINE

- Liaising with key stakeholders in the graphite anode and Li-ion battery industry
- Undertaking experiments for the testing of silicon/graphite anodes and full-cells, at scale.
- Working with the anode fabrication and testing team.
- Investigate micro-projects within the graphite battery chain to look at how to address specific challenges.
- Collecting, evaluating, and presenting data from testing equipment.
- Leading the preparation, or where appropriate individual preparation, of reports to industry partners and the CRC.
- Maintaining safety documentation in the lab including, MSDS sheets, chemical handling and storage, routine inspections, inductions and risk assessments.
- Maintaining confidentiality regarding results that are of industry or commercial interest.
- Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise.
- Administrative functions primarily connected with your area of research.
- Produce publications arising from research in peer reviewed journals.
- Active supervision of Masters student research projects and PhD students within the research area.

2.2 ENGAGEMENT

- Active participation in outreach activities relating to the research, including promotion of the research through media channels and advocacy groups.
- Effective liaison with external networks to foster collaborative partnerships.
- Involvement in professional activities, including consultations and referrals.

3. Equal Opportunity, Diversity and Inclusion

The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. This commitment is set out in the University's People Strategy and policies that address diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

All FEIT employees are required to behave in a manner that creates; supports and encourages an inclusive and safe work environment for all.

https://eng.unimelb.edu.au/diversity

4. Occupational Health and Safety (OHS)

All staff are required to take reasonable care for their own health and safety and that of other personnel who may be affected by their conduct.

OHS responsibilities applicable to positions are published at:

https://safety.unimelb.edu.au/people/community/responsibilities-of-personnel

These include general staff responsibilities and those additional responsibilities that apply for Managers and Supervisors and other Personnel.

5. Other Information

5.1 SCHOOL OF CHEMICAL AND BIOMEDICAL ENGINEERING

https://eng.unimelb.edu.au/about/departments/school-of-chemical-and-biomedical-engineering

The School of Chemical and Biomedical Engineering encompasses both the Department of Chemical Engineering and the Department of Biomedical Engineering. This fusion of engineering disciplines provides a dynamic and interdisciplinary environment that is world leading in both research and teaching.

5.2 DEPARTMENT OF CHEMICAL ENGINEERING

http://www.chemeng.unimelb.edu.au

The Department of Chemical Engineering hosts several Research Centres including the Peter Cook Centre for Carbon Capture and Research, the ARC Dairy Innovation Research Hub, the Particulate Fluids Processing Centre and the ARC Centre of Excellence in Convergent Bio-Nano Science and Technology.

Our laboratories are housed across four locations including a substantially renovated main building, a second building devoted exclusively to research, two floors within the nearby Chemistry building and a presence within the Bio21 Institute. Our academics have been elected as Fellows of the Royal Society, the world's oldest scientific society, the Australian Academy of Science, and the Australian Academy of Technological Sciences and Engineering.

Strong collaborations with industry, government and community partners inform teaching and research programs with real-world requirements. Industry Engagement is a key focus area for the Department. We carry out research projects based on deep collaborations with government and business and we also work with organisations that provide internship project opportunities for students.

We offer four Masters of Engineering degrees (Chemical, Chemical with Business, Biochemical, and Materials) with over 250 students, as well as undergraduate majors within the Bachelor of Science and Bachelor of Commerce.

5.2 FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY

The Faculty of Engineering and Information Technology (FEIT) has been the leading Australian provider of engineering and IT education and research for over 150 years. We are a multidisciplinary School organised into three key areas; Computing and Information Systems (CIS), Chemical and Biomedical Engineering (CBE) and Electrical, Mechanical and Infrastructure Engineering (EMI). FEIT continues to attract top staff and students with a global reputation and has a commitment to knowledge for the betterment of society.

FEIT has never been better positioned as a global leader, anchored in the dynamic Asia Pacific region, creating and curating knowledge to address some of the world's biggest challenges. Through our students and our relationships with communities, we can not only respond to society's needs but anticipate and create engineering and IT solutions for the future.

https://eng.unimelb.edu.au/

https://eng.unimelb.edu.au/about/join-mse

Our ten-year strategy, FEIT 2025, is our School's commitment to bring to life the University-wide strategy Advancing Melbourne and reinforce the University of Melbourne's position as one of the best in the world.

To achieve our ambitions, we will continue to build new infrastructure to enable our teaching, research and engagement; we continue to recruit outstanding people from around the world; and we continue to attract high-quality students from across the globe who are at the heart of our enterprise.

https://eng.unimelb.edu.au/about/mse-2025

5.3 THE UNIVERSITY OF MELBOURNE

Established in 1853, the University of Melbourne is a public-spirited institution that makes distinctive contributions to society in research, learning and teaching and engagement. It's consistently ranked among the leading universities in the world, with international rankings of world universities placing it as number 1 in Australia and number 32 in the world (Times Higher Education World University Rankings 2017-2018).

The University's 10-year strategy, *Advancing Melbourne* will enable the University to contribute to advancing the state and national interest and make vital contributions to Australia's standing on the world stage. We seek to be a leading force in advancing Australia as an ambitious, forward-thinking country while increasing its reputation and influence globally. https://about.unimelb.edu.au/strategy/advancing-melbourne

Further information about working at The University of Melbourne is available at http://about.unimelb.edu.au/careers