Position Number: 00050722
Position Title: Research Associate
Date Written: 10 September 2020

Faculty / Division: Engineering
School / Unit: Mechanical and Manufacturing
Position Level: Level A

ORGANISATIONAL ENVIRONMENT

UNSW is currently implementing a ten year strategy to 2025 and our ambition for the next decade is nothing less than to establish UNSW as Australia’s global university. We aspire to this in the belief that a great university, which is a global leader in discovery, innovation, impact, education and thought leadership, can make an enormous difference to the lives of people in Australia and around the world.

Following extensive consultation in 2015, we identified three strategic priority areas. Firstly, a drive for academic excellence in research and education. Universities are often classified as ‘research intensive’ or ‘teaching intensive’. UNSW is proud to be an exemplar of both. We are amongst a limited group of universities worldwide capable of delivering research excellence alongside the highest quality education on a large scale. Secondly, a passion for social engagement, which improves lives through advancing equality, diversity, open debate and economic progress. Thirdly, a commitment to achieving global impact through sharing our capability in research and education in the highest quality partnerships with institutions in both developed and emerging societies. We regard the interplay of academic excellence, social engagement and global impact as the hallmarks of a great forward-looking 21st century university.

To achieve this ambition we are attracting the very best academic and professional staff to play leadership roles in our organisation.

Values in Action: Our UNSW Behaviours

UNSW recognises the role of employees in driving a high performance culture. The behavioural expectations for UNSW are below.

Please refer to the UNSW Behavioural Indicators for the expectations of your career level (level A).

- **Delivers high performance and demonstrates service excellence.**
- **Thinks creatively and develops new ways of working. Initiates and embraces change.**
- **Works effectively within and across teams. Builds relationships with internal and external stakeholders to deliver on outcomes.**
Values individual differences and contributions of all people and promotes inclusion.

Treats others with dignity and empathy. Communicates with integrity and openness.

OVERVIEW OF RELEVANT AREA AND POSITION SUMMARY

The School of Mechanical and Manufacturing Engineering is one of the largest and most prestigious in Australia, with 2500 student enrolments, 80 academic staff, 25 professional staff, and total annual budget of over $22 million including external research grants. Our mission is to prepare students for careers of leadership and innovation, create new scientific advances, and translate research outcomes to positively impact national and global industry and society. We are seeking to attract high-calibre researchers and educators to expand our thriving research programs and contribute to our education excellence in Aerospace, Mechanical Engineering, Advanced Manufacturing Engineering, Robotics and Mechatronics. For further information about the School, please visit http://www.engineering.unsw.edu.au/mechanical-engineering/

The Research Associate will join an interdisciplinary research team to develop structural batteries and supercapacitors that can simultaneously carry load and store electric energy, and reversible adhesive for structural bonding. Key applications include un-manned air vehicles, electrical vehicles, and maritime vessels.

The role of Research Associate reports to Chun Wang and has no reports.

RESPONSIBILITIES

Specific responsibilities for this role include:

• Conducts research in the area of structural batteries, reversible adhesive for structural bonding and carbon-based energy structures that are capable of carrying load and storing electrical energy, independently and as part of a team.

• Contribute to the writing of scientific papers and reports for international journals and progress reporting to other researchers and industry partners.

• Assist with the coordination of research activities and actively contribute to research outputs to meet project milestones in collaboration with the chief investigators of the project.

• Contribute to the preparation of research grant and proposal submissions to funding bodies and actively seek collaboration with industry partners as appropriate.

• Participate in and/or present at conferences and/or workshops relevant to the project as required.

• Assist with the supervision of research students in the research area where required.

• Undertake a range of administrative functions associated with the research projects he/she is undertaking.

• Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.
SELECTION CRITERIA

- PhD in relevant area (e.g., Materials Engineering).
- Demonstrated ability to conduct independent research with limited supervision.
- Proven academic and/or industry experience in the areas of carbon fibre composite materials, energy storage materials and thermoplastic polymers Demonstrated ability to successfully undertake research within a team environment in collaboration with industry and/or other relevant stakeholders.
- Demonstrated knowledge and experience in effectively applying relevant advanced computational (e.g., machine learning (ML) and finite element analysis (FEA)) and/or experimental methods (e.g., synthesis and characterization of nanomaterials, analysis and evaluation of electrochemical and mechanical performance, device assembly of batteries and supercapacitors with carbon fibre laminates) in engineering research.
- Strong interpersonal skills with demonstrated ability to communicate and interact with a diverse range of stakeholders and students.
- Demonstrated track record of publications and conference presentations relative to opportunity.
- Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training
- Australian citizen or permanent resident visa holder

It is not the intention of the position description to limit the scope or accountabilities of the position but to highlight the most important aspects of the position. The aspects mentioned above may be altered in accordance with the changing requirements of the role.