Position Description – Research Fellow (Postdoctoral)

Position Details

Position Title:	Postdoctoral Research Fellow
College/Portfolio:	STEM College
School/Group:	School of Engineering
Campus Location:	Based at the Melbourne CBD campus.
Classification:	Academic Level A6 or B1 subject to post PhD experience
Employment Type:	Fixed Term (3 years)
Time Fraction:	1.0

RMIT University

RMIT is a multi-sector university of technology, design and enterprise with more than 96,000 students and close to 10,000 staff globally. The University's mission is to help shape the world through research, innovation and engagement, and to create transformative experiences for students to prepare them for life and work.
https://www.rmit.edu.au/about
https://www.universitiesaustralia.edu.au/university/rmit-university/

Our three main campuses in Melbourne are located in the heart of the City, Brunswick and Bundoora. Other locations include Point Cook, Hamilton and Bendigo, two campuses in Vietnam (Hanoi and Ho Chi Minh City) and a centre in Barcelona, Spain. RMIT is a truly global university. https://www.rmit.edu.au/about/our-locations-and-facilities

We are also committed to redefining our relationship in working with, and supporting, Indigenous self-determination. Our goal is to achieve lasting transformation by maturing our values, culture, policy and structures in a way that embeds reconciliation in everything we do. We are changing our ways of knowing, working and being to support sustainable reconciliation and activate a relationship between Indigenous and non-Indigenous staff, students and community. Our three campuses in Melbourne (City, Brunswick and Bundoora campuses) are located on the unceded lands of the people of the Woi Wurrung and Boon Wurrung language groups of the eastern Kulin Nation.

Why work at RMIT University

Our people make everything at the University possible. We encourage new approaches to work and learning, stimulating change to drive positive impact. Find out more about working at RMIT University, what we stand for and why we are an Employer of Choice.
https://www.rmit.edu.au/careers

We want to attract those who will make a difference. View RMIT's impressive standings in university rankings.
https://www.rmit.edu.au/about/facts-figures/reputation-and-rankings

STEM College

The STEM College holds a leading position and expertise in the science, technology, engineering, mathematics and health (STEM) fields. We are uniquely positioned to influence and partner with industry, as never before.

STEM College is a community of exceptional STEM researchers, teachers, inventors, designers and gamechangers, supported by talented professional staff. We offer higher education programs across all STEM disciplines at the Bachelor, Master and PhD levels, and ensure our students experience an education that is work aligned and life-changing.

The College is renowned for its exemplary research in many STEM areas including advanced manufacturing and design; computing technologies; health innovation and translational medicine; nano materials and devices; and sustainable systems. Our brilliant researchers attract funding from government and industry sources.

Industry is at the heart of what we do. It ensures our research has real world impact, and our students are truly work-ready. Under the leadership of DVC STEM College & Vice President, Digital Innovation, we have established new hubs of industry-connected digital innovation and endeavour and are engaging with global STEM organisations at scale.

Our diversity and shared values empower our work, and we are proud of the College's inclusive, caring culture. We offer a safe, dynamic work environment, and support every member of our community to achieve their potential. The College appointed Victoria's first ever Dean of STEM, Diversity & Inclusion in 2020, and this role drives gender equity, diversity and inclusion strategies across the College.

STEM College employs 1,000 staff who deliver onshore and offshore programs to approximately 20,000 students.

We are here to positively impact the world and create the next generation of STEM leaders.
www.rmit.edu.au/seh

School of Engineering

The School of Engineering is based on innovation and creativity. Our disciplines provide programs with flexible pathways to global careers or postgraduate research encompassing:

- aerospace engineering and aviation
- chemical and environmental engineering
- civil and infrastructure engineering
- electrical and biomedical engineering
- electronic and telecommunications engineering
- mechanical and automotive engineering
- manufacturing, materials and mechatronics engineering.

Position Summary

We are seeking a Postdoctoral Research fellow to join Materials Modelling and Simulation (MMS) group of RMIT University. The role will be based within the School of Engineering to advance research in molecular simulations of self-assembling lipid based nanoparticles.

The Postdoctoral Research Fellow will support the research aims and objectives of the Australian Research Council funded Discovery project “Next-Generation Lipid Nanoparticles” (DP250102188). Specifically, the research aims to investigate a recently discovered new class of mixed lipid-polyphenol self-assembling nanomaterials to develop an understanding of their assembly mechanisms, structure and biological interactions, including protein coatings (corona), cellular uptake and molecular cargo transportation efficacy. The Postdoctoral Research Fellow will conduct and interpret atomically resolved large scale Molecular Dynamics simulations to gain new understanding of these phenomena to help unlock the full biomedical potential of these tunable polyphenol-lipid nanomaterials in collaboration with the experimental partners. The Postdoctoral Research Fellow will be instrumental in the analysis of both theoretical and experimental data, forming a foundation for application of the Machine Learning algorithms to tune and optimise the design and biological interactions of the new generation lipid nanoparticles for future health and medical applications.

In addition, the Postdoctoral Research Fellow will also engage in related research projects focusing on the novel properties of the polyphenol complexes. This includes understanding the interactions of these compounds with various metals and macromolecules and developing multiscale models that can be used to simulate their structure, dynamics and interactions with artificial and natural surfaces, nanomaterials and the biological milieu.

The Postdoctoral Research Fellow will be expected to embed their research expertise into the life of the School through the development of quality and productivity-driven research networks across RMIT and with our external partners. The Fellow will be expected to produce high quality outputs to help attract competitive research funding.

Reporting Line

Reports to: Distinguished Professor Irene Yarovsky, Department of Mechanical, Manufacturing and Mechatronics Engineering

Organisational Accountabilities

RMIT University is committed to the health, safety and wellbeing of its staff. RMIT and its staff must comply with a range of statutory requirements, including equal opportunity, occupational health and safety, privacy and trade practice. RMIT also expects staff to comply with its policy and procedures, which relate to statutory requirements and our ways of working.

Appointees are accountable for completing training on these matters and ensuring their knowledge and the knowledge of their staff is up to date.

Key Accountabilities

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1. Conduct research/scholarly activities related to the ARC Discovery project under limited supervision either independently or as a member of a team including publishing and presenting research outputs at conferences and research forums.
2. Engage into research collaboration with the experimental partners particularly focusing on linkages between computational and experimental data analyses.
3. Participate in supervision of higher degree by research candidates.
4. Undertake limited teaching and supervision at undergraduate levels as required.
5. Undertake administration related to the position.
6. Contribute to the successful project management of the research by completing assigned work at the required level and within agreed timeframes.
7. Participate in annual work planning and performance management processes.
8. Perform other duties that may be required for the efficient operation of the research team.

Key Selection Criteria

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1. PhD in computational and/or theoretical chemistry or a related field.
2. Experience in developing and/or using atomistic Molecular Dynamics and related methods (forcefield parameterisation, enhanced sampling) using a variety of software packages.
3. Demonstrated ability to undertake high-quality research and write high-impact manuscripts in international peer-reviewed journals.
4. Demonstrated ability to work productively and effectively both as a member of a research team and independently when required, to meet project outcomes and milestones.
5. Demonstrated ability to efficiently run simulations on High Performance Computing (HPC) facilities.
6. Excellent interpersonal and communication skills appropriate for interacting with research students, staff and external stakeholders, together with a strong commitment to teamwork and multidisciplinary collaboration.

Qualifications

Mandatory:
PhD in computational and/or theoretical chemistry or related discipline.

Note: Appointment to this position is subject to passing a Working with Children Check and other checks as required by the specific role. Maintaining a valid Working with Children Check is a condition of employment at RMIT.