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## POSITION DESCRIPTION

<b>Position Title:</b>	Postdoctoral Research Fellow: Computational Chemistry and Organic Material Synthesis
<b>Organisation Unit:</b>	School of Chemistry and Molecular Biosciences
<b>Position Number:</b>	3034683
<b>Type of Employment:</b>	Fixed-term, Full-time for 12 months
<b>Classification:</b>	Academic Research Level A

## THE UNIVERSITY OF QUEENSLAND

The University of Queensland (UQ) contributes positively to society by engaging in the creation, preservation, transfer and application of knowledge. UQ helps shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas that benefit the world. UQ strives for the personal and professional success of its students, staff and alumni. For more than a century, we have educated and worked with outstanding people to deliver **knowledge leadership for a better world**.

UQ ranks in the world's top universities, as measured by several key independent ranking, including the Performance Ranking of Scientific Papers for World Universities (43), the US News Best Global Universities Rankings (52), QS World University Rankings (47), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (65). UQ again topped the nation in the prestigious Nature Index and our Life Sciences subject field ranking in the Academic Ranking of World Universities was the highest in Australia at 20.

UQ has an outstanding reputation for the quality of its teachers, its educational programs and employment outcomes for its students. Our students remain at the heart of what we do. The UQ experience – the UQ Advantage – is distinguished by a research enriched curriculum, international collaborations, industry engagement and opportunities that nurture and develop future leaders. UQ has a strong focus on teaching excellence, winning more national teaching excellence awards than any other in the country and attracting the majority of Queensland's highest academic achievers, as well as top interstate and overseas students.

UQ is one of Australia's Group of Eight, a charter member of edX and a founding member of Universitas 21, an international consortium of leading research-intensive universities.

Our 50,000-plus strong student community includes more than 13,000 postgraduate scholars and more than 12,000 international students from 144 countries, adding to its proud 240,000-plus alumni. The University has about 7,000 academic and professional staff and a \$1.8 billion annual operating budget. Its major campuses are at St Lucia, Gatton and Herston, in addition to teaching and research sites around Queensland and Brisbane city. The University has six Faculties and four University-level Institutes. The Institutes, funded by government and industry grants, philanthropy and commercialisation activities, have built scale and focus in research areas in neuroscience, biomolecular and biomedical sciences,

sustainable minerals, bioengineering and nanotechnology, as well as social science research.

UQ has an outstanding track-record in commercialisation of our innovation with major technologies employed across the globe and integral to gross product sales of \$11billion+ (see <http://uniquet.com.au/our-track-record>).

UQ has a rapidly growing record of attracting philanthropic support for its activities and this will be a strategic focus going forward.

## **Faculty of Science**

The Faculty of Science is recognised as a powerhouse for some of the world's leading scientists, teachers, science programs and commercial outcomes. The Faculty is one of the largest Science groupings in Australia, with approximately 1100 (equivalent full-time) staff, and about 7500 (equivalent full-time) students.

Throughout its Schools and Centres, the Faculty unites the disciplines of agriculture and animals, biomedical and biological sciences, chemistry, earth sciences, food sciences, geography, marine science, maths and physics, the environment and veterinary science.

With strong links between the enabling and applied sciences, UQ researchers and graduates are working on a wide range of groundbreaking projects from the molecular characterisation of drug resistant bacteria that affect piglets through to finding better treatments for illness and rehabilitation of the environment.

Information about the Faculty may be accessed on the Faculty's web site: <http://www.science.uq.edu.au/>

## **School of Chemistry and Molecular Biosciences**

The School of Chemistry and Molecular Biosciences (SCMB) combines the disciplines of Chemistry, Biochemistry & Molecular Biology, Microbiology and Parasitology into a single academic unit. The School has modern research laboratories with state-of-the-art equipment and research infrastructure. The School includes over 50 academic staff, who are widely published internationally and have extensive research backgrounds. Information about the School and research interests of academic staff may be found on the web site <http://www.scmb.uq.edu.au>.

## **Information for Prospective Staff**

Information about life at UQ including staff benefits, relocation and UQ campuses is available at - <http://www.uq.edu.au/current-staff/working-at-uq>

The University of Queensland [Enterprise Agreement](#) outlines the position classification standards for Levels A to E.

## **DUTY STATEMENT**

### **Primary Purpose of Position**

This position will conduct research into the development of novel computational approaches to modelling organic reactivity, and the design, synthesis and characterisation of organic chromophores for organic light-emitting diodes for lighting and/or photo-detectors.

## **Duties**

Duties and responsibilities include, but are not limited to:

### **Research**

- Conduct research in the area agreed with the supervisors and publish scholarly papers.
- Work with colleagues and postgraduates in the development of joint research projects between Australia and India.
- Present research findings at group meetings, seminars and conferences.
- Provide written progress reports on a weekly basis.

### **Service and Engagement**

- Perform a range of administrative functions in the School
- Foster the School's relations with industry, government departments, professional bodies and the wider community.
- Any other duties as reasonably directed by your supervisor

### **Other**

Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including but not exclusive to:

- the [University's Code of Conduct](#)
- requirements of the Queensland occupational health and safety (OH&S) legislation and related [OH&S responsibilities and procedures](#) developed by the University or Institute/School
- the adoption of sustainable practices in all work activities and compliance with associated legislation and related University [sustainability responsibilities and procedures](#)
- requirements of the Education Services for Overseas Students Act 2000, the National Code 2007 and associated legislation, and related [responsibilities and procedures](#) developed by the University

## **Organisational Relationships**

The position reports to Dr Elizabeth Krenske.

## SELECTION CRITERIA

### Essential

- Hold a PhD or equivalent in a relevant area of Chemistry (quantum chemistry, organic synthesis, and materials synthesis).
- Demonstrated recent and extensive experience in computational organic chemistry, including quantum mechanics and molecular mechanics techniques.
- Possess a sound knowledge of organic devices and the factors that are important in material designing organic materials for these applications;
- Demonstrate an in depth understanding of materials' thermal (DSC, TGA) and electrochemical properties;
- Demonstrated competence and success in a combination of the abovementioned areas (computational chemistry, chemical synthesis, and/or materials chemistry), as evidenced by publications (or papers in press) in peer reviewed journals;
- Ability to plan and execute computational chemistry research projects, and chemical synthesis and characterisation successfully and safely with minimal supervision;
- Demonstrated ability to take accurate and reliable records of work carried out;
- Ability to work in a multi-disciplinary team in an integrated program of work;
- Have a solid working knowledge of modern organic chemistry, computational chemistry, optoelectronics science and technology, and the ability to convey this understanding at seminars and in writing.
- High level written and verbal communication skills.

### Desirable

- Familiarity with online database searching and computer coding;
- The ability to present work to other scientists in the field in a clear and concise manner;
- Developed industry liaisons and professional contacts.
- Experience in liaising and collaborating with external agencies to develop co-operative research initiatives.

### **Qualification Verification**

An appointment to this position is subject to the verification of the highest academic qualification from the conferring institution.

**The University of Queensland values diversity and inclusion and actively encourages applications from those who bring diversity to the University. Please refer to the University's Diversity and Inclusion webpage (<http://www.uq.edu.au/equity>) for further information and points of contact if you require additional support.**

**Accessibility requirements and/or adjustments can be directed to the contact person listed in the job advertisement.**