POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow in Block Copolymer Self Assembly
Organisation Unit: Australian Institute for Bioengineering and Nanotechnology
Position Number: 3040762
Type of Employment: Fixed term, full time for three years
Classification: Research Academic 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://uniquest.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.

Organisational Environment

The University of Queensland's Australian Institute for Bioengineering and Nanotechnology (AIBN) is a dynamic multi-disciplinary research institute dedicated to developing technology to alleviate societal problems in the areas of health, energy, manufacturing and environmental sustainability. AIBN brings together the skills of more than 450 world-class researchers complimented by an extensive suite of integrated facilities, working at the intersection of biology, chemistry, engineering and computer modelling. With a reputation for delivering translational science, AIBN conducts research at the forefront of emerging technologies, and has developed strong collaborations with leading members of industry, academia and government. AIBN goes beyond basic research to develop the growth of innovative industries for the benefit of the Queensland and Australian economies. Information about the Institute can be accessed on the Institute's web site at http://www.aibn.uq.edu.au/.

AIBN is committed to supporting the career growth of female researchers and have a number of initiatives to support females in developing and achieving a fulfilling research career at the institute. For more information, please visit our AIBN Women in Science web site at http://www.aibn.uq.edu.au/women.

The project will form part of the research activities of the Polymer Group at the Australian Institute for Bioengineering and Nanotechnology which is led by Prof Andrew Whittaker. Research covers many aspects of polymer science, engineering and processing. More details of the group can be found at http://www.uq.edu.au/polymer-chemistry/.

Chemo-epitaxy is the science of organizing materials on a surface decorated with chemical patterns. The process has the potential to revolutionize the manufacture of integrated circuits, enabling faster processors. This project will develop novel approaches to organizing block copolymers through the photochemical modification of the surface of a photo-sensitive polymer. Two innovative approaches will be introduced, one based on a photo-rearrangement reaction, and the other on photo-radical trapping. Block copolymers (BCPs) capable of being ordered will be prepared and their arrangement on the chemical patterns examined. This project, funded by the Australian Research Council will be led by Prof Whittaker and Dr Hui Peng, and will be in collaboration with Dr Peter Trefonas of the Dow Chemical Company.

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

The project involves the synthesis, characterisation and functionalization of polymeric surfaces and block copolymers (BCPs). The position requires extensive knowledge of polymer chemistry, especially synthetic polymer chemistry.

Duties

Duties and responsibilities include, but are not limited to:

Research

- To develop a strong and productive research program in BCP chemo-epitaxy
- To synthesize and characterize novel polymeric surfaces and to examine their photochemical modification
- Liaise with the project manager, other team members and collaborators to work towards the common objectives of the Institute
- Foster effective collaboration with national and international partners
- Prepare reports of experimental findings, write publications and present seminars
- Contribute to mentoring and supervision of postgraduate students

Service and Engagement

- Perform a range of administrative functions in the AIBN.
- Foster the Institute’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 Prof Andrew Whittaker.
**SELECTION CRITERIA**

**Essential**
- PhD in polymer synthetic chemistry; or an equivalent combination of relevant experience, and/or education/training.
- Extensive experience in synthesis and characterization of polymeric materials.
- Knowledge and experience with measurement of the properties of polymers, especially in solution, using scattering techniques and high resolution NMR.
- Fundamental knowledge of surface materials science.
- Solid evidence of research activity in the field of polymeric materials.
- The ability to independently plan, execute and interpret experiments.
- The ability to rapidly adopt and adapt novel research techniques.
- An ability to establish effective relationships and to represent and promote polymer chemistry and medical imaging science at a university and wider community level, including industry, government and professional bodies.
- High level of inter-personal and communication skills.
- Good writing and presentation skills, and the capacity to work collaboratively within a multidisciplinary research team.

**Desirable**
- Experience in behavior of block copolymers.
- Interest in technology commercialization and product development.
- Strong desire to develop a successful and highly-productive research career in the development of advanced polymeric materials.
- Experience in the preparation of competitive research grants
- Experience in supervision of graduate students

**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](http://www.uq.edu.au/equity)) for further information and points of contact if you require additional support.

This role is a full-time position; however flexible working arrangements may be negotiated.

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