POSITION DESCRIPTION

Position Title:	Postdoctoral Research Fellow
Organisation Unit:	Advanced Water Management Centre
Position Number:	NEW
Type of Employment:	Full-time, fixed term appointment for three years
Classification:	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 (60). 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 Advanced Water Management Centre (AWMC) is an internationally recognised centre of excellence in innovative water technology and management. The Centre has an outstanding worldwide reputation in urban water management and related fields, and an award winning multidisciplinary team delivers practical technological solutions underpinned by fundamental scientific discoveries.

The Centre has six interlinked programs namely, next generation urban water technologies, integrated urban water management, sewer corrosion and odour management, nexus of urban water, health and environment, resource efficient agri-industry and environmental biotechnology.

Collaborative linkages with industry are strong and solutions developed by the Centre have yielded quantifiable benefits in the order of hundreds of millions of dollars to the Australian water industry and other sectors. At the same time, the AWMC has an outstanding academic publication record, publishing on average more than 100 papers a year in high quality journals including the most prestigious multidisciplinary journals including Nature and Science, and top discipline journals such as Water Research and Environmental Science and Technologies.

The Centre has well-established process, microbiology and analytical labs. The direct collaboration with industry partners has also led to the creation of several field facilities including the Innovation Centre at Queensland Urban Utilities' Luggage Point Sewage Treatment Plant, supporting technology demonstration at larger scales and under practical conditions.

Our people are our greatest asset. We offer collaborative, inclusive work and study places, which are enriched by the significant diversity of our staff, students and community. We genuinely believe that creativity and innovation flourishes in an environment where people feel supported, valued and empowered. Mutual respect, inclusivity and accountability are at the cornerstone of UQ's culture.

The Centre is committed to supporting the career growth of women researchers and have a number of initiatives to support women in developing and achieving a fulfilling research career at the Centre.
For more Information about the Centre, please visit: www.awmc.uq.edu.au

Information for Prospective Staff

The Centre recognises and values equity and diversity, and encourages applications from any individual who meets the requirements of this position irrespective of gender, sexuality,

race, ethnicity, religion, disability, age or other protected attributes. The Centre strives to provide an inclusive working environment, and along with the University is committed to supporting staff with family and caring responsibilities by providing policies, programs and initiatives to help balance work and family responsibilities.

Further 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

Recently, a team at the Advanced Water Management Centre, has been awarded an Australian Research Council Linkage project.

Direct anaerobic treatment of wastewater converts majority of organic matters in wastewater to methane, an energy source. However, up to 50% of the methane produced stays dissolved in wastewater. Its subsequent stripping to atmosphere in aerobic treatment not only causes significant loss of energy but also emission of a potent greenhouse gas. This project aims to develop a technology that not only avoids methane stripping but also enables its beneficial use to enhance nitrogen removal, which is otherwise typically unsatisfactory due to the lack of organic carbon to support denitrification. This project requires using conducting comprehensive and in-depth process- and microbial investigations at both laboratory- and pilot-scale, to validate the proposed process and to develop a robust technology for the water industry.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Perform experiments at both laboratory- and pilot-scale to enrich anaerobic methane oxidation microorganisms.
- Use state-of-the-art DNA sequencing approaches to gain an in-depth understanding of the biofilm structure and function, the key microorganisms in the biofilm.
- To develop and validate a one-dimensional multi-species biofilm model to describe in-biofilm processes
- Guide PhD students during their work.
- Publish scholarly papers in high impact international journals in the field.

Administration

- The postdoctoral research fellow will partially participate in the management of the project.
- Co-supervise PhD students on the project.
- Liaise with national and international collaborators.
- Draft project reports for distribution to AWMC management, industry partners and ARC.

Service and Engagement

- Perform a range of administrative functions in the Centre
- Foster the Centre'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. Jianhua Guo, Deputy Director – Research of AWMC, and Leader of the Project.

SELECTION CRITERIA

Essential

- PhD in the area of *environmental engineering, wastewater treatment process, or environmental microbiology, submitted or completed before the start date of the position*.
- Demonstrated expert knowledge of membrane biofilm reactor design and operation
- Experience in anaerobic methane oxidation and knowledge of microbial ecology, molecular microbiology and microbial biofilms.
- Evidence of high-quality publications in the aforementioned areas
- Ability to;
    - rigorously design experiments and to perform experiments under well-controlled conditions.
    - perform in-depth and critical data analysis.
    - work in a multidisciplinary team particularly covering biological, chemical and computer sciences, and process engineering.
    - work collaboratively with colleagues.

Desirable

- Demonstrated capability in project management
- Understanding of multi-species biofilm model and experience in techniques of anaerobic microbiology
- Potential to;
  - provide academic supervision to postgraduate students
  - potential for contributing to research program development, including external grant applications.

Qualification Verification

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

Equity and Diversity

The Centre recognizes and values equity and diversity, and encourages applications from any individual who meets the requirements of this position irrespective of gender, sexuality, race, ethnicity, religion, disability, age or other protected attributes. The Centre strives to provide an inclusive working environment, and along with the University is committed to supporting staff with family and caring responsibilities by providing policies, programs and initiatives to help balance work and family responsibilities.

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.