



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

POSITION DESCRIPTION

Position Title:	Research Assistant
Organisation Unit:	Advanced Water Management Centre
Position Number:	3036789
Type of Employment:	Full time, fixed term for 1 year (with possible extension)
Classification:	HEW Level 6

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 more than 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 will have further success in this area as an important strategic aim going forward.

Advanced Water Management Centre

The Advanced Water Management Centre (AWMC) is an internationally recognised centre of excellence in innovative water technology and urban water management. The Centre's 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. 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 over 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 AWMC has approximately 100 staff and students including 35 academic and research staff and more than 50 research students. 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.

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.

Information about the Centre may be accessed at <http://www.awmc.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>

DUTY STATEMENT

Primary Purpose of Position

In collaboration with research and industry partners, the AWMC Wastewater Research Team is developing and demonstrating novel wastewater technologies that maximise energy recovery from wastewater linked to innovative nitrogen removal. In particular, the FNA-biogas technology, developed by the team, will be trialled at pilot scale. Pilot plants will be constructed and commissioned on-site at the collaborative Queensland Urban Utilities Innovation Centre located at Luggage Point Wastewater Treatment Plant. These demonstration projects are a critical step towards full-scale implementation of the technologies. The position will be responsible for day-to-day operation of the pilot plant systems, and associated scientific, technical and engineering support, both on-site and in AWMC laboratories. The position may also be involved in operation and maintenance of the pilot sewer system.

Duties

Duties and responsibilities include, but are not limited to:

Research:

- Undertaking laboratory, pilot plant and field experiments, including identifying and acquiring necessary equipment e.g. sensors, centrifuges, pumps, etc
- Installation, repair, calibration, general maintenance of equipment in laboratories and on-site experimental systems located at industry partner facilities
- Assembly/construction of experimental and pilot plant systems including process design, sourcing and procurement of equipment and hardware, and commissioning
- Operation, maintenance, and trouble-shooting of pilot plants for water and wastewater treatment and the pilot sewer system
- Deployment and maintenance of on-line process control systems
- Accurate collection and storage of experimental data as well as analysis, interpretation and monitoring of trends
- Drafting technical reports for industry partners and grantor including preparation and presentation of experimental data
- Development of OH&S and HAZOP procedures for working in the laboratory, field and on-site at industry partner facilities
- Liaising with technicians and operators at industry partner facilities to ensure OH&S and HAZOP procedures are met and applied by experimental systems
- Training students and researchers on safe and correct operation of equipment and experimental systems where required
- Attend and contribute to technical meetings with research team members and industry partners
- Manual labour such as lifting, carrying, and transport of multiple wastewater containers of up to 25kg each, on a day-to-day basis to support research activities

Other

Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:

- 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 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 Shihu Hu, Chief Investigator and On-site Manager of the Pilot Plant.

SELECTION CRITERIA

Qualification

Essential

- An undergraduate degree in Engineering, Technology or Science
- Current Qld 'C' Class driver licence

Desirable

- Postgraduate qualifications in Engineering, Technology or Science

Knowledge and Experience

Essential

- Good understanding of water chemistry and wastewater engineering systems
- Practical understanding of OH&S and HAZOP in wastewater engineering, and of laboratory safety such as handling of biological and chemical hazards
- Experience in conducting experimental work in the field of water management at laboratory-, pilot-, and/or full-scale
- Experience in maintenance, calibration, and troubleshooting of scientific, mechanical and electrical equipment
- Experience with field work such as water sampling and filtration, and water quality measurement with multiprobes
- Demonstrated skills in data analysis and critical assessment of operational procedures, requiring accurate record keeping and attention to detail
- Experience with liaising and collaborating with industry partners in a research environment

Desirable

- Demonstrated skills in operating full- or pilot-scale water and wastewater systems
- Competency and understanding of process control in particular, PLC systems, and software such as Opto 22, LabView systems or C++
- Construction and development of biotechnological equipment requiring electrical, mechanical engineering, and design skills
- Experience in writing scientific/technical reports and user-friendly manuals/notes to document procedures and operating instructions

Personal Qualities

- Ability to work effectively and independently with limited supervision, and as a member of a team
- Self-motivated and ability to resolve issues using own initiative
- Good communication and organisational skills and the ability to meet objectives within set deadlines.
- Ability to efficiently develop new skills and gain knowledge within the scope of the position

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.

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.