

POSITION DESCRIPTION

Position Title:	Postdoctoral Research Fellow
Organisation Unit:	School of Civil Engineering
Position Number:	NEW
Type of Employment:	Full-Time, Fixed Term
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://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.

Organisational Environment

The School of Civil Engineering is one of the largest schools of its kind in Australia. Located in the state-of-the-art, \$135 million Advanced Engineering Building, the School passionately delivers world-leading teaching, research, and service. We aspire to be the civil engineering school of choice for students, staff, industry, and the wider community in the fields of water, environmental, geotechnical, structural and transportation engineering.

Our goal is to foster graduates with the technical and professional skills required to lead the civil engineering profession and we aim to re-engineer civil and environmental research to improve the way communities operate and function.

Our academic staff hail from over 24 countries, are widely published and cited, and have extensive research backgrounds in diverse engineering disciplines including coastal, environmental, fire safety, geotechnical, hydraulics, structural, transport, and water resources. These research strengths attract expert academics and students from around the world and provide industry with consulting expertise, research collaboration and testing facilities.

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 School 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 School.

The School has an agreed set of values that include:

1. Respecting each other.
2. Embracing equity and diversity.
3. Making decisions transparently whenever possible.
4. Collaborating across disciplines and universities.
5. Supporting each other.
6. Being accountable and responsible.
7. Seeking first to understand then be understood.
8. Making positive and meaningful societal contributions.
9. Celebrating achievement.

For more information about the School, please visit: www.civil.uq.edu.au

Information for Prospective Staff

The School 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 School 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>

DUTY STATEMENT

Primary Purpose of Position

The School of Civil Engineering is undertaking research projects, funded by the Australian Research Council and various industry partners, focussing on pilot scale investigation and demonstration of next generation biosolids treatment technologies. More specific, these

projects aim to develop cost-effective and sustainable biosolids treatment technologies that can (i) increase the recovery of resources from biosolids and (ii) simultaneously remove emerging contaminants such as Per- and polyfluoroalkyl substances (PFAS). The key role of the postdoctoral research fellow would be to undertake research on smouldering combustion-based sludge management strategy at the pilot scale for these research projects.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Support a research program in the areas of (i) thermal treatment of biosolids (and other solid waste streams); and, (ii) resource recovery from these sources and abatement of Per- and polyfluoroalkyl substances (PFAS).
- Responsible for the design, commissioning and operation of a smouldering combustion sludge pilot facility and associated equipment.
- Plant operations, sampling and laboratory analysis as required.
- Communicate results and project progress to project stakeholders, through development of project reports, project meetings and presentations.
- Publish scholarly papers related to this research area in high quality outlets.
- Expand the research programme including through contributions to external funding applications.
- Collaborate with colleagues and postgraduates in the development of joint further research projects.
- Contribute to supervision, mentoring and training of research staff and students at honours and postgraduate levels.
- Any other duties as 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 Ilje Pikaar.

SELECTION CRITERIA

Essential

- PhD in the field of Environmental Engineering or Environmental Science, or a closely related field, with a strong background in Waste Management and Thermal Treatment processes.

- Demonstrated knowledge in one or more of the following areas: solid waste management, thermal treatment technologies including gasification, pyrolysis, combustion and torrefaction.
- Demonstrated knowledge in performing risk assessment and management, including hazard and operability (HAZOP) studies of pilot, demonstration or full-scale facilities.
- Demonstrated leadership in research projects and evidence of contribution to research including an ability to write high quality scientific articles.
- Demonstrated experience in planning, constructing, and/or operating pilot (or demonstration) scale studies in the field of thermal treatment of solid wastes (and ideally biosolids).
- Ability to promote the School's activities within the University and the external community and demonstration of excellent communication and interpersonal skills.
- A high level of drive and enthusiasm and an effective ability to time manage and prioritise demands.
- High attention to detail and a methodical but expeditious approach to research work
- Demonstrated ability to work to work independently as well as collaboratively with colleagues and research students, including those from different disciplines, as well as with administrative and technical staff

Desirable

- Knowledge about Computational Fluid Dynamics (CFD) for reactor optimization.
- Good understanding of PFD and P&IDs.
- A good understanding of OH&S and HAZOP in wastewater engineering.
- Knowledge of PLC programming techniques.
- Ability to write user-friendly manuals to document procedures and operating instructions

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.

Applications are particularly encouraged from Aboriginal and Torres Strait Islander peoples. For further information, please contact our Australian Indigenous Employment Coordinator at: atsi_recruitment@uq.edu.au. Applications are also encouraged from women.

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