POSITION DESCRIPTION

Position Title: Research Technician (Materials Science)
Organisation Unit: School of Mechanical and Mining
Position Number: NEW
Type of Employment: Full-time
Classification: HEW Level 5

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://uniqquest.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**

With an excellent reputation for quality graduate training and research performance, the School of Mechanical and Mining Engineering delivers a comprehensive range of programs in aerospace, materials, mechanical, mechatronic and mining engineering.

Boasting strong student enrolments in professionally accredited programs, combined with world-class researchers and facilities, we are focused on strengthening our position in the engineering community. We will develop global solutions to contemporary issues and mentor the leaders of tomorrow by attracting the brightest minds and fostering a truly innovative and collaborative work environment.

The School recognises and values equity and diversity, and encourages applications from any individual who meets the requirements of this position, regardless 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.

For more information about the School, please visit: [http://www.mechmining.uq.edu.au/](http://www.mechmining.uq.edu.au/)

Within the School, Dr Jeff Gates leads a research group focused on understanding of the mechanisms of abrasive wear in mining industry environments and on development of improved wear-resistant materials for these environments. Dr Gates is one of the Chief Investigators in the new ARC Industrial Transformation Training Centre in Alloy Innovation for Mining Efficiency (mineAlloy, [http://minealloy.com.au/](http://minealloy.com.au/)), which is a collaboration between Deakin University, The University of Queensland and Monash University, with 6 industry partners. Dr Gates is also the Director of UQ Materials Performance (UQMP), a professional contract research and consultancy enterprise operating as a business unit of UniQuest Pty Limited (ABN 19 010 529 898). UQMP specialises in research into the durability of materials and structures, notably in the following fields:

a) Abrasive wear (as described above);

b) Non-metallic materials (including composites, coatings, membranes and particulates) — focussing on durability, condition assessment and environmental factors.

c) Forensic engineering — developing improved failure investigation methodologies suitable for application in a time-sensitive, safety-critical commercial environment.

**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](http://www.uq.edu.au/current-staff/working-at-uq)
DUTY STATEMENT

Primary Purpose of Position

To provide technical support to our senior materials scientists and materials engineers, integrating with the existing team in order to strengthen UQMP’s suite of contract research & consultancy services to industry. The role will provide technical and administrative support for projects in the areas of non-metallic particulates characterisation, materials science, analytical chemistry, materials engineering and metallurgical & mechanical failure investigations. The role will contribute to financial targets while enhancing UQMP’s reputation for integrity, quality and impact.

Duties:

Duties and responsibilities include, but are not limited to:

- Sample management — including receipt, registration, storage, and disposal.
- Prepare a wide variety of metallic and non-metallic material samples for the senior researchers/consultants to examine and test (for techniques such as stereomicroscopy, scanning electron microscopy, Fourier transform infrared analysis, X-ray diffraction, polished-section microscopy and testing of mechanical properties.)
- Prepare and examine particulate samples (e.g. dust fallout and filter deposits) by optical microscopy and scanning electron microscopy. Photograph and rigorously record the direct observations (and where possible interpretation) of the samples examined.
- Prepare and test samples of building cladding as pertaining to flammability assessment.
- Prepare lab reports giving the results of tests performed.
- Provide administrative support to the research team, including data entry into UQMP’s customer relationship management (CRM) system, project management database and timesheets, to aid in invoicing efficiency and pipeline management.
- Contribute positively to UQMP’s presence and image within UQ, industry, commerce and government.
- Acquire new skills and techniques in chemical and engineering aspects of the materials science discipline, as required.
- Adhere to UQ’s health and safety policy and participate in regular group safety meetings to ensure health and safety of yourself, co-workers and the public.
- Conform to UQMP’s Quality Assurance guidelines and maintain high standards of housekeeping and laboratory practices, ensuring all outputs are of a consistent and high quality.
- Abide by and effectively utilise UniQuest ExCom and University of Queensland policies, procedures, processes and facilities.
- Other duties as directed by UQMP’s senior researchers and consultants.

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 Jeff Gates, Director – UQ Materials Performance.
SELECTION CRITERIA

**Essential**

- Undergraduate degree in a scientific or engineering discipline with a strong chemistry component; or diploma qualification with at least two (2) years subsequent relevant work experience; or Certificate IV qualification with extensive relevant work experience; or an equivalent combination of experience and/or education/training.
- Demonstrated experience as a laboratory technician with duties covering either chemical analysis, materials science specimen preparation, or mechanical testing.
- Demonstrated experience in stereomicroscopy.
- Experience in the use of a wide range of standard computer applications in a network environment (particularly Microsoft Excel, Word, Outlook).
- Proficient numeracy and literacy skills.
- Attention to detail, disciplined and systematic in planning work methods and in recording of observations and results.
- Strong work ethic — with ability to prioritise own workload and work independently, but also willing to work to explicit priorities and time-frames communicated by the designated project leader.
- Excellent interpersonal skills, including the ability to communicate effectively with clients and colleagues by telephone, email and in person.

**Desirable**

- Experience with scanning electron microscopy (SEM) and energy-dispersive X-ray spectroscopy (EDS).
- Experience with one or more of the following techniques: polarised light microscopy, infrared spectroscopy, UV-visible spectroscopy, X-ray diffraction, X-ray photoelectron spectroscopy.
- A trade background or experience and proficiency with one or more of the following techniques: tensile testing, hardness testing, preparation of polished sections, forklift license, hand tool and power tool usage.

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.