

POSITION DESCRIPTION

Position Title:	X-Ray Diffraction, Spectroscopy and Imaging Laboratory Manager
Organisation Unit:	Centre for Microscopy and Microanalysis
Position Number:	New
Type of Employment:	Continuing
Classification:	level HEW 8

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 (45), QS World University Rankings (48), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (69). UQ again topped the nation in the prestigious Nature Index, and our Academic Ranking of World Universities result in the field of Life and Agricultural Sciences is 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 Centre for Microscopy and Microanalysis (CMM) has a world standard laboratory equipped with state-of-the-art instrumentations and techniques in electron and X-ray microscopy and analysis. The Centre has a wide range of cutting edge instruments and techniques including, conventional and cryo electron microscopes, cs corrected S/TEM, X-ray analysis instrumentation, electron based nano-fabrication tools as well sample preparation facilities for material and life science and data processing workflows. The centre provides leading edge capability in microstructural analysis to the staff and students across a broad range of disciplines at the University of Queensland.

The Centre's strengths lie in training clients in relevant techniques and in solving characterisation problems relevant to a wide range of industrial, environmental and biological processes.

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

This role is to principally lead and manage, the X-Ray Diffraction, Spectroscopy and Imaging laboratory within the Centre for Microscopy and Microanalysis (CMM). The role involves a number of aspects including: working closely with the Centre's Director and Service Support Unit to strategically plan for and deliver the effective and efficient operation of the lab, to assist the Director in the strategic planning and ongoing funding of the Centre's operations, to supervise and manage a small team of instrument scientists and to effectively manage the budget for the laboratory. In addition the incumbent will have expertise in areas (specify area of expertise relevant to the laboratory) and would be responsible for the training of new users in the proper and effective usage of instrumentation, aiding clients in experimental design and in the interpretation of high-quality data, conducting experiments for clients and the production of high experimental results and the development of new workflows for experiments.

The role supports the CMM mission statement in providing the university community with a "high standard of training programs" and a "working environment where clients receive expert advice to achieve their research goals" and enhance or enable new research opportunities in the "material characterization space".

The Instrumentation under the care of the Lab Manager is valued at approximately \$6.5Million AUD, located in a lab of 225 m² with additional office and meeting room space.

Duties

Duties and responsibilities include, but are not limited to:

- Management and Leadership
 - Supervision of laboratory staff including managing their workloads and goals and conducting and reporting on performance appraisals.
 - Oversight and management of the X-Ray Diffraction, Spectroscopy and Imaging laboratories including the health and safety of staff and clients, day-to-day operations, physical and data infrastructure and instrumentation.
 - Ensure that operations are efficient and effective and that the proper management of resources, distribution of projects and services/analysis for the day-by-day operation are available.
 - Manage the budget for the laboratory in consultation with the Director and Centre Manager.
 - Strategic planning for and supporting the Director in the operations, growth and future funding of the laboratory and Centre.
 - Ensuring effective management and center-wide coordination of client projects in collaboration with all Laboratory Managers.
- Training and Assisting Clients in:
 - Advanced X-ray techniques relevant to the persons expertise,
 - Sample preparation,
 - Analysis of data, and
 - Safety (OH&S) and/or compliance requirements specific to the laboratory (e.g. Radiation Safety)
- Provision of service to client projects including:
 - Consultation and guidance of clients in surface science challenges,
 - Conducting measurements,
 - Data analysis and presentation of results,
 - Assisting in manuscript preparation where appropriate, and
 - Report writing.
- Leading Team to Ensure Effective Laboratory Upkeep and Operations (including)
 - Coordination of preventative and emergency maintenance of instruments,
 - Maintaining up-to-date user manuals, safety protocols and standard operation procedures,
 - Developing and adopting sustainable practices and implementing efficient workflows.
 - Administration, documentation and reporting of client activities,
- Ensuring the overall compliance of the laboratory with the University's Code of Conduct, OH&S responsibilities and X-ray safety regulations, and
- Outreach, Engagement and Development
 - Actively engage externally in areas of relevance to CMM and Research Platforms including activities of the National Microscopy Platform (Microscopy Australia), but also (other relevant professional bodies) and support staff members to do likewise.
 - Develop and support of R&D projects in novel experiments, improved workflows or analysis methods where appropriate.
 - Learning (upskilling) of current or future methods relevant to function in CMM.
 - Teaching in X-ray and surface analysis methods in lecture series, workshops, technique schools, demonstrations for lectures, visitors or schools etc.
- Microscopy Australia (MA - NCRIS) specific duties:
 - Supporting visitors to the node from other institutions as part of the MA (national facilities) obligation.
 - Working with the research staff of the relevant node in developing new methodologies for the instruments as well as for sample preparation and data

- analysis, as appropriate.
- Contribution of data, reports and other materials for the MA Annual Report.
- Provide support consistent with the position classification to the Node Director and Executive Director of MA.
- Administration
 - Ensure all client data related (bookings, training etc.) are entered in the Centre's client management system so that figures for invoicing and reporting purposes are accurate.
 - Assist with the collection of data, publications, impact studies and other relevant material for reporting purposes.
- Other
 - Be compliant with the relevant radiation safety requirements to operate analytical X-ray instrumentation in Queensland including maintaining a valid X-ray Use License in Queensland.
 - 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 the Director of the Centre for Microscopy and Microanalysis

SELECTION CRITERIA:

Essential

- Postgraduate qualifications in Chemistry, Physics or Materials Engineering with a focus in Analytical X-ray methods or progress towards postgraduate qualifications and extensive relevant experience in Chemistry, Physics or Materials Engineering with a focus in Analytical X-ray methods or extensive experience and management expertise in Chemistry, Physics or Materials Engineering with a focus on Analytical X-ray methods or an equivalent combination of relevant experience and/or education/training.
- Demonstrated experience in managing and leading teams.
- Previous experience in operating within a client focused research platform and the management of scientific instrumentation.
- Experience in applying scientific and engineering principles and practices to perform technical services and support.
- Solid understanding of the principles of contemporary X-ray characterisation including in situ and in operando methods.
- A keen interest in instrumentation and advanced characterisation techniques.
- Experimental experience in X-ray techniques, applications and data/spectra processing.
- Best practice knowledge of computational processing and analysis of X-ray data.
- At least 5 years of direct experience in X-ray techniques, with expertise in sample preparation and handling, using instruments and evaluating data.

- Experience in liaising and collaborating with external agencies to develop co-operative research initiatives.
- Experience in liaising and collaborating with instrument vendors and developers to initiate or request next generation characterisation methods and technologies.
- Excellent written communication and verbal communication skills with proven ability to produce clear, succinct reports and documents.

Desirable

- Demonstrated success in grant writing and funding requests
- Solid understanding of vacuum technologies including cryo-vacuum handling
- Developed industry liaisons and professional contacts.
- Experience in complementary methods (e.g. X-ray imaging and “microscopy”, electron microscopy and spectroscopy methods, Mass spectrometry, vibrational and/or NMR spectroscopies).
- A sound general knowledge of modern scientific methods and their applications in a range of scientific disciplines
- Knowledge of computing and programming.
- Experience in image or data/spectra processing.

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](#) 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 recruitment@uq.edu.au.