POSITION DESCRIPTION

Technical Officer - XRD

Position Level 6
Faculty/Division Division of Research & Enterprise
Position Number 00099731
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Position Summary
The X-Ray Diffraction (XRD) facility hosts nine X-ray diffractometers across two laboratories with a computer facility for offline data processing. The diffractometers comprise two Bragg Brentano geometry powder instruments (one copper, one cobalt X-ray source), two copper X-ray source thin-film instruments, two copper X-ray source rotating-anode thin-film instruments, a silver X-ray source instrument with a position sensitive detector and two molybdenum source single-crystal instruments. The XRD Laboratory provides training and scientific support services to internal and external research groups, as well as commercial clients.

The laboratory specialises in X-ray diffraction instrumentation for analysis of bulk microcrystalline powders, thin-films and single crystals. The Technical Officer will be a member of the scientific team in the Solid State and Elemental Analysis (SSEA) Unit providing support to users of the facility, and instrument maintenance, and experiment set-up for the two senior scientific officers in the laboratory.

The Technical Officer reports to the Head, SSEA, and has no direct reports.

Accountabilities
Specific accountabilities for this role include:

- Manage the operation of all types of X-ray diffractometers in the XRD Laboratory by conducting and/or coordinating routine maintenance, troubleshooting and repairs of equipment and infrastructure.
- Provide induction, instrument training and troubleshooting for all research staff and students. Coordinate the use and supervise the operation of specialised equipment by research staff and students, and participate in the delivery of short courses on X-ray diffraction.
- Recognise the role of special X-ray optics and sample stages, and how to set-up special experiments on the instrument when required.
• Provide specialist technical advice to staff and students, such as demonstration of techniques and the operation of equipment and respond efficiently and courteously to requests.

• Maintain the data analysis computers, ensuring software, databases, and licences are up to date, each computer is labelled with the current software packages, and reporting problems to the MWAC Systems Manager when necessary.

• Maintain user records using in our in-house on-line booking system.

• Provide user support and problem-solving during measurement and data analysis.

• Provide operational expertise in the efficient day-to-day management and scheduling of teaching and/or research activities to facilitate the delivery of laboratory teaching and/or research.

• Ensure cleanliness of sample preparation areas, and general laboratory infrastructure if functional and repaired by UNSW facilities Management when required.

• Manage WHS issues including risk assessment and development, implementation and monitoring of compliance of Safe Work Procedure documents.

• Contribute to the broader activities of the Analytical Centre as required, such as input to advisory groups on communicating our capabilities and optimising Centre-level operational processes.

• Align with and actively demonstrate the UNSW Values in Action: Our Behaviours and the UNSW Code of Conduct.

• Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.

Skills and Experience

• A relevant tertiary qualification plus equivalent experience, in a discipline involving extensive use of X-ray diffraction instrumentation and its applications in chemical, physical or materials science.

• Demonstrated experience in the area of X-ray diffraction, preferably with an emphasis on XRD, especially quantitative XRD using Rietveld Analysis, and single-crystal analysis and/or experience working in a teaching laboratory.

• Demonstrated experience operating, maintaining and managing scientific instrumentation and experience with IT based laboratory management systems.

• Proven technical capabilities in areas aligned with laboratory activities with a proven ability to apply knowledge and experience to analyse, investigate and solve technical and operational issues.

• Excellent interpersonal and communication skills (both verbal and written) including the ability to liaise with a diverse group of people from varying backgrounds.

• Ability to work independently with minimum supervision and contribute positively to the effective working of a team.

• Experience working with, training and supervising others within a multidisciplinary research environment.

• Demonstrated ability to apply, interpret, advise on the development of policies, systems, procedures and guidelines.

• An understanding of and commitment to UNSW’s aims, objectives and values in action, together with relevant policies and guidelines.

• Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.
About this document

This Position Description outlines the objectives, desired outcomes, key responsibilities, accountabilities, required skills, experience and desired behaviours required to successfully perform the role.

This template is not intended to limit the scope or accountabilities of the position. Characteristics of the position may be altered in accordance with the changing requirements of the role.