



Position Description

College/Division:	ANU College of Science
Faculty/School/Centre:	Centre for Advanced Microscopy (CAM)
Department/Unit:	Centre for Advanced Microscopy (CAM)
Position Title:	Senior Technical Officer (Microanalytical Engineer)
Classification:	ANU Officer Grade 7 (Technical)
Position No:	1393
Responsible to:	Director, CAM
Number of positions that report to this role:	N/A
Delegation(s) Assigned:	N/A

PURPOSE STATEMENT:

About the Centre

The Centre for Advanced Microscopy (CAM) is the ANU's core microscopy and analytical facility, covering a wide range of applications related to biological and materials characterisation and imaging. The Centre's goal is to facilitate and provide research excellence through a focus on world-class capabilities matched with staff expertise relevant to a wide range of manufacturing, environmental and biological processes. It achieves this through consultation, training, teaching, data collection and their analysis to meet the characterisation requirements of local, national and international researchers and industry. CAM is also part of a national grid of Microscopy Australia (MA) facilities, further enabling shared access to an even wider range of unique equipment, and technical staff experience.

CAM is a purpose-built facility which comprises 8 research professional and administrative staff supporting a diverse range of instrument platforms. The Centre currently houses world class facilities equipped with state-of-the-art instruments and techniques in basic and advanced light, electron and X-ray microscopy and analysis. CAM currently houses 3 high-end TEMs, 3 FESEMs, a recently installed FIB/SEM (Crossbeam) and a JEOL JXA8530F Field Emission Gun electronprobe microanalyser (EPMA).

Further information about CAM may be accessed on the ANU's web site at microscopy.anu.edu.au.

About Microscopy Australia

Microscopy Australia (formerly known as the Australian Microscopy and Microanalysis Research Facility) is a national grid of university-based microscopy and microanalysis laboratories, providing open access to world-class instrumentation and expert knowledge to all Australian researchers. Funded by the Commonwealth government under the National Collaborative Research Infrastructure Strategy (NCRIS), relevant state governments and with co-investment by the institutional partners, Microscopy Australia's mission is to enable world-class outcomes from Australian research by providing essential infrastructure for the characterisation of materials at the micro, nano and atomic scales in the material and life sciences. Comprising nine core institutions with linkages to another nine laboratories, Microscopy Australia is a large collaborative research infrastructure facility governed as an unincorporated joint venture that develops and implements a business plan annually in accordance with the overall Microscopy Australia project plan.

Information about Microscopy Australia may be accessed on the web site at www.micro.org.au

KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:

Within the broad framework of the delivery of microscopy services and research at CAM, the specialist will provide expertise in the operation of various microanalytical techniques including the JEOL JXA8530F electronprobe microanalyser (EPMA).

The Microanalytical Engineer reports directly to the Director, CAM and will provide (i) expert advice and training on the EPMA and other high-end instruments (including SEM) and techniques to researchers and students from ANU, other universities and industry users, (ii) formal training workshops on a regular basis, (iii) lab and equipment management including maintenance of instrumentation.

Role Statement:

Under the broad supervision of the Director and Operation Manager, CAM, but with a degree of autonomy, the Senior Technical Officer (Microanalytical Engineer) will:

- Provide high level technical advice to stakeholders on experimental design, risk assessments and instruction on the principles and practice of high-quality quantitative analysis using both WDS and EDS techniques. In consultation with the Director and the Operations Manager, they will take a lead role in the guidance of users including coaching and mentoring to build their operational and technical capability in EPMA (and other microanalytical) research at CAM.
- Ensure all users have been inducted and provided the required training and support to work in the EPMA facility and that training materials are developed, readily available and updated.
- Provide expert technical support in the general maintenance of the EPMA and other microanalytical instrumentation as required. This includes monitoring instrument performance and maintaining spectrometer and/or standard calibrations; monitoring the quality and validity of user data; maintaining continuous and detailed records of instrument maintenance. Provide diagnostic support and solve complex problems associated with the equipment and develop software solutions as required.
- Analyse experimental outputs to assist in the preparation of data for research publication. Keep abreast of new and emerging technologies and implement plans to deliver the best techniques coupled with the best training to CAM users.
- Develop and maintain networks amongst other School and College Technical staff on CAM's capabilities and facilities.
- Develop and deliver training courses in microanalysis and relevant sample preparation techniques, and assist with other courses when appropriate.
- Develop and implement marketing strategies to ensure that stakeholders are aware of existing and emerging capabilities available within CAM.
- Complete general administration duties associated with the microanalytical facilities including the preparation of reports, ensuring safe working practices, WHS requirements and compliance protocols for regulatory requirements are met.
- Oversee the management of inventories, including the preparation and/or ordering of supplies and collating cost estimates on laboratory purchases.
- Undertake other duties as required, consistent with the classification level of this position and in line with the principles of multi-skilling.
- Comply with all ANU policies and procedures, and in particular those relating to work health and safety and equal opportunity.

SELECTION CRITERIA:

- A degree (Bachelor of Science minimum, MS or PhD preferred) with at least 3 year's subsequent relevant experience, or an equivalent combination of relevant experience and/or education/training.
- Demonstrated extensive experience in the use of an electron microprobe and other related techniques in earth and/or materials science research.
- A proven ability to contribute to leadership of a teaching or research laboratory with demonstrated experience assisting honours and postgraduate students with laboratory equipment and instrumentation, including EPMA, and a strong understanding of WHS and regulatory requirements.

- Demonstrated experience in the running and management of equipment and infrastructure, including monitoring and maintenance of specialised equipment, preferably within a research support facility/higher education environment or similar complex environment.
- Demonstrated understanding of mineral chemistry and of the physical and chemical principles of quantitative analysis and micro-imaging of materials by electron microprobe (and other relevant instruments/techniques).
- Enthusiasm and capacity for development of innovative analytical and imaging techniques capitalising on the enhanced capabilities of a modern Field Emission Gun electronprobe microanalyser.
- Demonstrated experience in organising and assisting in the training of staff and students participating in research activities on a complex instrument in a safe laboratory environment.
- Proven ability to work both independently and as part of an interdisciplinary work environment with demonstrated capabilities for multi-tasking, attention to detail to keep accurate records and sound judgement to prioritise competing deadlines.
- Demonstrated excellence in written and verbal English communication including maintaining accurate records, asset registries, lab protocols, safety procedures, and to work both independently with limited supervision and harmoniously in a team environment with a diverse range of people.

- Demonstrated high-level understanding of equal opportunity principles and occupational health and safety, and a commitment to the application of these policies in a university context.

The ANU conducts background checks on potential employees, and employment in this position is conditional on satisfactory results in accordance with the [Background Checking Procedure](#) which sets out the types of checks required by each type of position.

Supervisor/Delegate Name:	Melanie Rug	Date:	06.09.2021
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References:

[Professional Staff Classification Descriptors](#)

[Academic Minimum Standards](#)



Pre-Employment Work Environment Report

Position Details

College/Div/Centre	CoS	Dept/School/Section	CAM
Position Title	Microanalytical Engineer	Classification	ANUO 7 (Technical)
Position No.	1393	Reference No.	

In accordance with the Work Health and Safety Act 2011 (Cth) the University has a primary duty of care, so far as reasonably practicable, to ensure the health and safety of all staff while they are at work in the University.

- This form must be completed by the supervisor of the advertised position and appended to the back of the Position Description.
- This form is used to advise potential applicants of work environment and health and safety hazards prior to application.
- Once an applicant has been selected for the position they must familiarise themselves with the University WHS Management System via Handbook guidance <https://services.anu.edu.au/human-resources/health-safety/whs-management-system-handbook>
- The hazards identified below are of generic nature in relation to the position. It is not correlated directly to training required for the specific staff to be engaged. Identification of individual WHS training needs must be in accordance with WHS Local Training Plan and through the WHS induction programs and Performance Development Review Process.
- 'Regular' hazards identified below must be listed as 'Essential' in the Selection Criteria - see 'Employment Medical Procedures' at http://info.anu.edu.au/Policies/_DHR/Procedures/Employment_Medical_Procedures.asp

Potential Hazards

<ul style="list-style-type: none"> • Please indicate whether the duties associated with appointment will result in exposure to any of the following potential hazards, either as a regular or occasional part of the duties. 			
TASK	regular	occasional	
key boarding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
lifting, manual handling	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
repetitive manual tasks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Organizing events	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
fieldwork & travel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
driving a vehicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
NON-IONIZING RADIATION			
solar	<input type="checkbox"/>	<input type="checkbox"/>	
ultraviolet	<input type="checkbox"/>	<input type="checkbox"/>	
infra red	<input type="checkbox"/>	<input type="checkbox"/>	
laser	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
radio frequency	<input type="checkbox"/>	<input type="checkbox"/>	
CHEMICALS			
hazardous substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
allergens	<input type="checkbox"/>	<input type="checkbox"/>	
cytotoxics	<input type="checkbox"/>	<input type="checkbox"/>	
mutagens/teratogens/ carcinogens	<input type="checkbox"/>	<input type="checkbox"/>	
pesticides / herbicides	<input type="checkbox"/>	<input type="checkbox"/>	
IONIZING RADIATION			
gamma, x-rays	<input type="checkbox"/>	<input type="checkbox"/>	
beta particles	<input type="checkbox"/>	<input type="checkbox"/>	
nuclear particles	<input type="checkbox"/>	<input type="checkbox"/>	
BIOLOGICAL MATERIALS			
microbiological materials	<input type="checkbox"/>	<input type="checkbox"/>	
potential biological allergens	<input type="checkbox"/>	<input type="checkbox"/>	
laboratory animals or insects	<input type="checkbox"/>	<input type="checkbox"/>	
clinical specimens, including blood	<input type="checkbox"/>	<input type="checkbox"/>	
genetically-manipulated specimens	<input type="checkbox"/>	<input type="checkbox"/>	
immunisations	<input type="checkbox"/>	<input type="checkbox"/>	
OTHER POTENTIAL HAZARDS (please specify):			
Supervisor/Delegate Name:	<i>Melanie Rug</i>		Date: <i>6.9.2021</i>