



Position Description

College/Division:	College of Science
Faculty/School/Centre:	Centre for Advanced Microscopy (CAM)
Department/Unit:	Centre for Advanced Microscopy (CAM)
Position Title:	Mineralogy Electron Microscopy Specialist
Classification:	ANU Officer 6/7 (Specialist)
Position No:	TBC
Responsible to:	Director – Centre for Advanced Microscopy
Number of positions that report to this role:	0
Delegation(s) Assigned:	NA

PURPOSE STATEMENT:

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.

Microscopy Australia is a national grid of university-based microscopy and microanalysis laboratories, providing open access to world-class instrumentation and expert knowledge to researchers across disciplines and to industry clients. 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. It achieves this 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.

KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:

The Mineralogy EM Specialist reports to the Director and will take a lead role in the guidance of users including coaching and mentoring to build their operational and technical capability in microanalytical analysis at CAM.

Role Statement:

Under the broad direction of the Director, the Mineralogy Electron Microscopy Specialist will:

- Provide specialist advice to stakeholders on experimental design, and instruction on the principles and practice of high-quality quantitative EDS analysis and automated mineral mapping.
- Analyse experimental outputs, assist users/generate data for research publication or for preparation of reports for external clients. The candidate is expected to contribute to collaborative projects and publications (design, experimentation, technical) as well as seek active conference participation.
- Keep abreast of new and emerging technologies and implement plans to deliver the best specialist advice coupled with the best training for CAM users.
- Ensure all users have been inducted, provided the required risk assessment information, instrument training and support, to work in the microanalytical facility. Ensure any required training documentation is developed, readily available and updated.
- Provide specialist support in the general maintenance and provide diagnostic support and solve complex problems associated with the microanalytical suite of instrumentation as required. This includes monitoring

instrument performance and maintaining standard calibrations; monitoring the quality and validity of user data; maintaining continuous and detailed records of instrument maintenance. Develop software solutions as required.

- Develop and maintain networks amongst other School and College staff and implement marketing strategies to promote CAM's capabilities and facilities.
- Join and become an active member on relevant Microscopy Australia committee(s) and on relevant microscopy/microanalytical societies.
- Develop and deliver training courses in mineralogy, microanalysis, in SEM principles and operation and relevant sample preparation techniques. Assist with other courses (undergraduate teaching and CAM workshops) when appropriate.
- Complete general administration duties associated with the microanalytical facilities including cost estimates, management of inventories and and/or ordering of supplies. Document safe working practices, ensuring that WHS requirements and compliance protocols for regulatory requirements are met.
- Undertake other duties as required from time to time consistent with the classification level of the position.
- Comply with all ANU policies and procedures, particularly 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 1 year's subsequent relevant experience, or an equivalent combination of relevant experience and/or education/training.
- Demonstrated experience in the use of Scanning Electron Microscopes and associated microanalytical techniques, especially as applied to earth science (mineralogy) research.
- Demonstrated understanding of mineral chemistry and the physical principles of quantitative X-ray analysis and micro-imaging of mineralogical samples by SEM and other relevant instruments/techniques.
- Proven experience in using mineral mapping software.
- Demonstrated experience in monitoring and maintenance of specialised equipment.
- A proven ability to contribute to a teaching or research laboratory with demonstrated experience assisting honours and postgraduate students with microanalytical laboratory equipment and instrumentation and a strong understanding of WHS and regulatory requirements.
- Enthusiasm and capacity for development of innovative analytical and imaging techniques.
- Demonstrated experience in 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 (collaborative team) 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.

Desirable

- Additional experience in EPMA - WDS quantitative analysis on an electron microprobe will be an advantage.

ANU Officer Levels 6 and 7 are broad banded in this stream. It is expected that at the higher levels within the broadband occupants, through experience, will have developed skills and expertise enabling them to more independently perform the full range of duties at a higher level, and that more time will be spent on the more complex functions of the position.

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:	A/Prof Melanie Rug	Date:	August 2024
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References:

[General Staff Classification Descriptors](#)



Pre-Employment Work Environment Report

Position Details

College/Div/Centre	College of Science	Dept/School/Section	Centre for Advanced Microscopy
Position Title	Mineralogy Electron Microscopy Specialist	Classification	ANU Officer 6/7 (Specialist)
Position No.	TBC	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	TASK	regular	occasional
key boarding	X	<input type="checkbox"/>	laboratory work	X	<input type="checkbox"/>
lifting, manual handling	<input type="checkbox"/>	X	work at heights	<input type="checkbox"/>	<input type="checkbox"/>
repetitive manual tasks	<input type="checkbox"/>	<input type="checkbox"/>	work in confined spaces	<input type="checkbox"/>	<input type="checkbox"/>
Organizing events	<input type="checkbox"/>	<input type="checkbox"/>	noise / vibration	<input type="checkbox"/>	<input type="checkbox"/>
fieldwork & travel	<input type="checkbox"/>	<input type="checkbox"/>	electricity	<input type="checkbox"/>	<input type="checkbox"/>
driving a vehicle	<input type="checkbox"/>	X			
NON-IONIZING RADIATION			IONIZING RADIATION		
solar	<input type="checkbox"/>	<input type="checkbox"/>	gamma, x-rays	X	<input type="checkbox"/>
ultraviolet	<input type="checkbox"/>	<input type="checkbox"/>	beta particles	<input type="checkbox"/>	<input type="checkbox"/>
infra red	<input type="checkbox"/>	<input type="checkbox"/>	nuclear particles	<input type="checkbox"/>	<input type="checkbox"/>
laser	<input type="checkbox"/>	<input type="checkbox"/>			
radio frequency	<input type="checkbox"/>	<input type="checkbox"/>			
CHEMICALS			BIOLOGICAL MATERIALS		
hazardous substances	<input type="checkbox"/>	X	microbiological materials	<input type="checkbox"/>	<input type="checkbox"/>
allergens	<input type="checkbox"/>	<input type="checkbox"/>	potential biological allergens	<input type="checkbox"/>	<input type="checkbox"/>
cytotoxics	<input type="checkbox"/>	<input type="checkbox"/>	laboratory animals or insects	<input type="checkbox"/>	<input type="checkbox"/>
mutagens/teratogens/ carcinogens	<input type="checkbox"/>	<input type="checkbox"/>	clinical specimens, including blood	<input type="checkbox"/>	<input type="checkbox"/>
pesticides / herbicides	<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:		A/Prof Melanie Rug		Date:	August 2024



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College/Division:	College of Science
Faculty/School/Centre:	Centre for Advanced Microscopy (CAM)
Department/Unit:	Centre for Advanced Microscopy (CAM)
Position Title:	Mineralogy Electron Microscopy Specialist
Classification:	ANU Officer 8 (Specialist)
Position No:	TBC
Responsible to:	Director – Centre for Advanced Microscopy
Number of positions that report to this role:	0
Delegation(s) Assigned:	NA

PURPOSE STATEMENT:

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.

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KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:

The Mineralogy EM Specialist reports to the Deputy Director CAM and 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 instrumentation and analyses at CAM.

Role Statement:

Under the broad direction of the CAM Management team, the Mineralogy EM Specialist will:

- Provide independent specialist advice to stakeholders on experimental design, and instruction on the principles and practice of high-quality quantitative EDS analysis and automated mineral mapping.
- Independently analyse experimental outputs, assist users/generate data for research publication or for preparation of reports for external clients. The candidate is expected to take a leading analytical role (design, experimentation, technical) in collaborative projects towards publications and active conference participation.
- Keep abreast of new and emerging technologies and implement plans to deliver the best specialist advice coupled with the best training for CAM users.

- Ensure all users have been inducted, provided the required risk assessment information, instrument training and support, to work in the microanalytical facility. Ensure any required training documentation is developed, readily available and updated.
- Provide specialist support in the general maintenance and provide diagnostic support and solve complex problems associated with the microanalytical instrumentation as required. This includes monitoring instrument performance and maintaining standard calibrations; monitoring the quality and validity of user data; maintaining continuous and detailed records of instrument maintenance. Develop software solutions as required.
- Develop and maintain networks amongst other School and College staff and implement marketing strategies to promote CAM's capabilities and facilities.
- Join and become an active member on relevant Microscopy Australia committee(s) and on relevant microscopy/microanalytical societies.
- Independently develop and deliver training courses in mineralogy, microanalysis, SEM principles and operation and relevant sample preparation techniques. Assist with other courses (undergraduate teaching and CAM workshops) when appropriate.
- Complete general administration duties associated with the microanalytical facilities including cost estimates, management of inventories and and/or ordering of supplies. Document safe working practices, ensuring that WHS requirements and compliance protocols for regulatory requirements are met.
- Provide strategic support and advice on microanalysis and SEM related techniques in order to guide or achieve future directions.
- Undertake other duties as required from time to time consistent with the classification level of the position.
- Comply with all ANU policies and procedures, particularly those relating to work health and safety and equal opportunity

SELECTION CRITERIA:

- A degree (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 and understanding of the physical principles of Scanning Electron Microscopy and associated microanalytical techniques, especially as applied to earth science (mineralogy) research.
- Demonstrated understanding of the physical principles of quantitative X-ray analysis, mineral chemistry and micro-imaging of mineralogical samples by SEM and other relevant instruments/techniques.
- A proven and extensive experience in using mineral mapping software.
- 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.
- A proven ability to contribute to leadership of a teaching or research laboratory with demonstrated experience assisting honours and postgraduate students with microanalytical laboratory equipment and instrumentation, and a strong understanding of WHS and regulatory requirements.
- Enthusiasm and capacity for development of innovative analytical and imaging techniques.
- 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 (collaborative team) 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.

Desirable

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Australian
National
University

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driving a vehicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
NON-IONIZING RADIATION			IONIZING RADIATION		
solar	<input type="checkbox"/>	<input type="checkbox"/>	gamma, x-rays	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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radio frequency	<input type="checkbox"/>	<input type="checkbox"/>			
CHEMICALS			BIOLOGICAL MATERIALS		
hazardous substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	microbiological materials	<input type="checkbox"/>	<input type="checkbox"/>
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pesticides / herbicides	<input type="checkbox"/>	<input type="checkbox"/>	genetically-manipulated specimens	<input type="checkbox"/>	<input type="checkbox"/>
			immunisations	<input type="checkbox"/>	<input type="checkbox"/>
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