



AMMRF @ The Australian National University

The ANU Electron Microscopy Unit (EMU)

The Australian National University is Australia's largest and most diverse postgraduate research university. Its EMU caters for a broad range of pure and applied research in topics covering materials science to physiology to earth resources and supports a similarly wide range of undergraduate teaching disciplines.



Contact and information

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(EMU)

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Node Director:
Prof. Tim White

About the Node

By having a primary focus on novel research, the ANU conceives and engineers many scientific tools and techniques. A strength of the EMU is the capability to key into these areas of research by providing access to the Unit's expert staff and diverse facilities. Through having a centrally staffed electron microscopy facility, the overall research community on campus is enriched. Electron microscopy related techniques are required in many research areas, including:

- Photovoltaic materials
- Electronic and semi-conducting materials
- Advanced ceramics
- Photonic devices
- Polymers and glasses
- Plant physiology
- Palaeontology
- Geochronology
- Petrophysics
- Biomineralisation
- Experimental petrology
- Climate change
- Anthropology
- Fluid flow in porous media
- Wood anatomy
- Solid-state inorganic chemistry
- Engineered composites
- Animal visual systems

The EMU has therefore become a meeting point for a diverse range of sciences and as a result has led to many cross-disciplinary research projects.

In addition to these fields of research, the EMU supports several materials and nanotechnology networks hosted at the ANU, and will play a major role in the NCRIS-supported Australian National Fabrication Facility Ltd.

Locally in the Australian Capital Territory, the EMU acts to focus electron microscopy expertise and enjoys collaboration with its partner universities and with local institutions such as CSIRO, the Australian Federal Police, The Royal Australian Mint, The National Gallery of Australia, Canberra Hospital, Geoscience Australia as well as many industry partners.



Node Director



Prof. Tim White

Tim joined the EMU as Director in 2009, having originally received his PhD in chemistry from the Australian National University. He has

worked at universities and national laboratories in Australia, Europe and North America and was head of the Materials Science Division in the School of Materials Science and Engineering at Nanyang Technological University in Singapore. His primary area of expertise is crystallography, which he explores by using X-ray, electron and neutron diffraction. His research is directed towards the design of advanced materials for environmental remediation, superconductivity, hydrogen storage, catalysis and ion exchange. Tim is also concerned with developing new pedagogies for the accelerated training of microscopists.

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Deputy Director & Laboratory Manager



Dr Frank Brink

Frank has a BSc in Applied Physics (UniSA, 1991), an MSc (LaTrobe, 1996) and a PhD in Solid State Chemistry (ANU, 2005). He has

extensive experience in the maintenance and operation of scanning and transmission electron microscopes as well as in providing expert support in quantitative electron probe microanalysis, electron diffraction and a range of materials SEM applications. He has been a visiting fellow at the Research School Chemistry, ANU, since 2005 where his research interests include the investigation of oxygen/fluorine ordering in metal-oxyfluoride systems.

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