Australian Microscopy and Microanalysis Research Facility (AMMRF)

The AMMRF is a joint venture between Australian university-based microscopy and microanalysis centres. It was established in July 2007 under the National Collaborative Research Infrastructure Strategy (NCRIS).

The AMMRF provides researchers with a national grid of equipment, instrumentation and expertise in microscopy and microanalysis that offers nanostructural characterisation capability and services, including widely used optical, electron, X-ray and ion-beam techniques and world-leading flagship platforms.

Key facts

- States: NSW, QLD, ACT, SA, VIC, WA
- Lead institute: University of Sydney
- Project status: In progress
- Australian Government contribution:
    - $21.1 million from the National Collaborative Research Infrastructure Strategy program
    - $5.1 million under the Collaborative Research Infrastructure Scheme
    - $1,692,012 from the National Collaborative Research Infrastructure Strategy 2013 program

Funding partners include the host institutions and the governments of NSW, Queensland, Victoria, SA and WA.

Project deliverables

The AMMRF provides users with access to eight flagship instruments and more than 250 other instruments at almost 20 nodes, linked laboratories and linked centres.
It also provides a suite of training tools, data analysis and technique finders to help researchers efficiently find the research method they need.

Researchers in fields as diverse as biology, metallurgy, archaeology, engineering, nanotoxicology, energy, immunology and mineralogy have all benefitted from AMMRF's facilities and expertise.

AMMRF flagship instruments include:

- ion probes for chemical and high-precision isotopic analysis and imaging at the nanoscale
- high-throughput cryo-transmission electron microscopy for structural analysis
- local electrode atom probes for atomic-level analysis of materials
- high-resolution scanning electron microscopes with focused ion beams, energy dispersive X-ray spectroscopy and electron backscattered diffraction systems
- field-emission scanning electron instruments for materials analysis
- time-of-flight secondary ion mass spectrometer for surface analysis and depth profiling.

Access
All Australian researchers are eligible to become users of AMMRF. All project proposals are assessed on:

- scientific merit
- feasibility and quality of research
- availability of technical expertise
- availability of relevant instrumentation
- compliance with node OH&S and risk processes
- relevant ethics approval obtained by the user.

Reasonable commercial rates are charged to industry users. Researchers wishing to access AMMRF facilities can find details at on the AMMRF website.

Participating organisations
Nodes:

- University of Sydney (Headquarters)
- University of New South Wales
- University of Queensland
- Australian National University
- University of Western Australia
- SA Regional Facility, comprising University of Adelaide, Flinders University, University of South Australia

Linked laboratories:

- James Cook University
- Queensland University of Technology
- Macquarie University
- RMIT University
- CSIRO Australian Animal Health Laboratory
- Curtin University

Linked centres:

- Australian Institute of Bioengineering and Nanotechnology (AIBN) at the University of Queensland
- Australian National Fabrication Facility (ANFF) at the Australian National University
- Australian Nuclear Science and Technology Organisation (ANSTO) Institute of Materials Engineering
- Plant Breeding Institute (PBI) at the University of Sydney

Related links
The AMMRF is one of four characterisation facilities established or with major contributions from the Australian Government under NCRIS. The other three facilities are:

- National Imaging Facility
- National Deuteration Facility
- The Australian Synchrotron

All four characterisation facilities are brought together through the National Characterisation Council.