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2. [Research Infrastructure](http://research.unimelb.edu.au/infrastructure)
3. [Materials Characterisation and Fabrication Platform](http://research.unimelb.edu.au/infrastructure/materials-characterisation-and-fabrication-platform)

Materials Characterisation and Fabrication Platform

**The Capability**

Materials science is an interdisciplinary field that enables the discovery and design of new materials through the study of synthesis, structure, properties and performance. Characterisation and fabrication underpins new materials discovery and design and incorporates a number of technologies at the forefront of engineering, nanoscience and nanotechnology.

**The University Platforms**

The Materials Characterisation and Fabrication Platform is a multi-node platform within the University supporting materials research.  The Platform facilitates access to a range of complementary technologies, focusing on atomic force microscopy, super-resolution microscopy, nanofabrication and X-ray diffraction. The MCFP welcomes all users across the scientific community, from universities and research institutes to industry. The nodes of the Platform  are highlighted below:

* [**Advanced Fluorescence Imaging**](http://nanomaterials.unimelb.edu.au/node/advanced-fluorescence-imaging)

Located within the School of Engineering, the Advanced Fluorescence Microscopy Node combines cutting-edge technology in super-high resolution microscopy, live cell imaging and imaging flow cytometry. Notably, the super-high resolution microscope offers the ability to resolve structures down to 20nm providing unprecedented insight into cellular systems, while the Amnis Image Stream combines the statistical power and sensitivity of conventional flow cytometry with the spatial resolution of digital microscopy.

* [**Nanofabrication**](http://nanomaterials.unimelb.edu.au/node/nanofabrication)

The Nanofabrication node supports University of Melbourne researchers accessing the Melbourne Centre for Nanofabrication, located in Clayton. With a University Platform Support Officer located at the MCN, researchers have supported access to the key capabilities in lithography, thin film deposition, etching, design and prototyping, and characterisation.

* [**X-Ray Diffraction**](http://nanomaterials.unimelb.edu.au/node/x-ray-diffraction)

The X-Ray diffraction node of the MCFP provides a range of services to investigate structural properties of materials, including crystalline phase identification, quantitative phase analysis and crystallite phase analysis.

* [**Nanomaterials Characterisation**](http://nanomaterials.unimelb.edu.au/node/nanomaterials-characterisation)

The Nanomaterials Characterisation node of the MCFP houses a world-class scanning probe microscopy facility with considerable expertise in both direct force measurement and surface imaging and characterisation. The facility supports a number of internal and collaborative research projects, providing equipment access and technical support.

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