THE UNIVERSITY OF SYDNEY

Sydney Analytical
Vibrational Spectroscopy

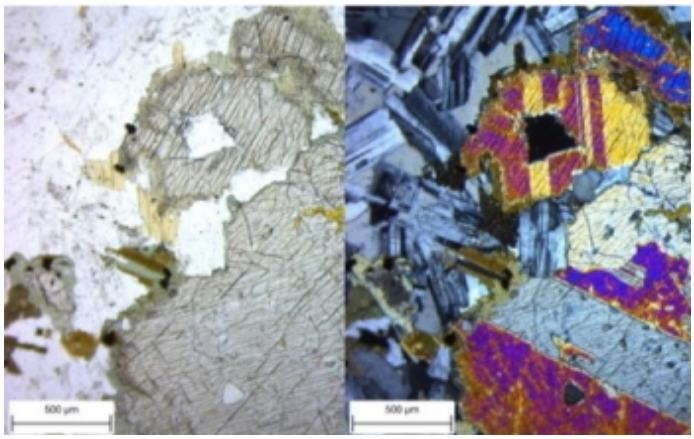
Cutting and Polishing (CaP) Laboratory

Supporting research excellence through sample preparation

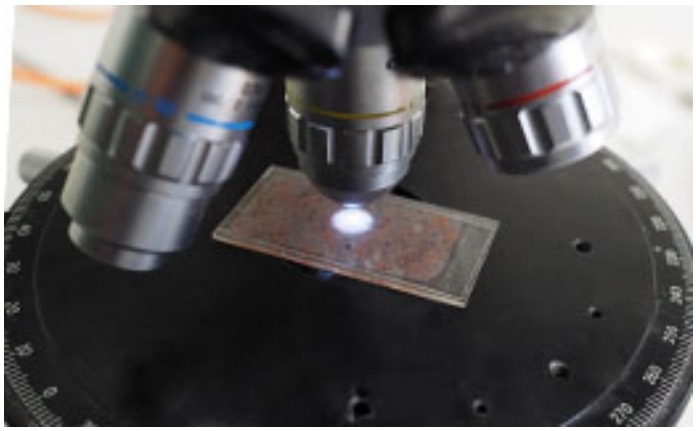
The CAP Laboratory at Sydney Analytical provides sample preparation across a wide range of analytical instrumentation. Our capabilities span from cutting and grinding to polishing of bulk samples, prepared mounts and sections, with the ability to adapt every step in the preparation process to individual needs and a focus on quality and quick turnaround times.

We can provide:

- polished and cover-slipped thin-sections
- double-sided polished thin-sections
- polished thick-sections and other mounted samples
- epoxy impregnated samples and sample mounts
- stain-impregnated samples
- ground powders, slides, bulk samples and mounts
- rough and high precision cut bulk samples, slides and mounts (depending on sample)



Mineralogical thin-section under plain polarised light (left) and cross-polarised light (right)



We can prepare a range of materials from a variety of research fields, including geoscience, materials science and engineering, medicine, archaeology and cultural heritage.

Materials we work with include:

- geological samples
  e.g. rocks, sands, ores, minerals
- slags
- ceramics
- coral and shell
- bones and teeth
- glass

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Our cutting and polishing facilities

The CaP Laboratory houses an array of cutting, grinding and polishing equipment. Instrumentation operated and maintained by the laboratory include:

- Wet saws, fitted with diamond blades
- Tema ring mill, equipped with steel and tungsten carbide bowls
- Enerpac press
- Vacumet vacuum casting unit
- Petrographic thin-section saw-grinder
- Kemet KPL 300 lapping machine
- Mecatech 334 polishing machine, covering a range of diamond suspensions from 15 µm to <1 µm
- Kent 3 automatic lapping and polishing unit
- Kent MK2A polishing unit
- Stuers Accutom 50 precision saw

Contact us

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Who are we?

Sydney Analytical is a multidisciplinary facility supporting research excellence across the University of Sydney. Its state-of-the-art research infrastructure supports research and development in the fields of: nanoscience; clinical medicine; medical and life sciences; chemistry; physics; agricultural, environmental and veterinary sciences; engineering; pharmaceutical sciences; geosciences; museum and cultural studies, and many more.

Sydney Analytical houses more than 30 high-end instruments spanning multiple techniques, from infrared and Raman spectroscopy, crystallography, X-ray diffraction and X-ray fluorescence spectroscopy to nuclear magnetic resonance and electron paramagnetic resonance, amongst others. Many of the instruments are the most advanced of their kind in Australia, with some the only ones available in the country. The facility also actively engages extensively with industry, including a collaboration with ANSTO to support neutron and synchrotron research.

Staff at Sydney Analytical also provide a range of services and expertise to assist researchers during all stages of their project starting with experimental design and sample preparation through to publication. We also provide guidance and assistance with finding and using external equipment.

Thick-section (100 µm) made from a sample of terrazzo flooring used in the new School of Life and Environmental Sciences building.

Thin-section made from a sandstone sample collected from the Main Quadrangle, University of Sydney. The porous sample was set in epoxy before mounting on a glass slide.

CRICOS 00026A