MONASH University

MONASH INNOVATION LABS

SAMPL CAPABILITIES

INSTRUMENTATION AND PROCESS EQUIPMENT FOR CHEMICAL, BIOLOGICAL AND MATERIALS RESEARCH

MONASH University

WORKING WITH SAMPL

MiLabs SAMPL (Student Analytical Makerspace and Pilot Laboratories) is equipped with a range of sample preparation and analytical instruments for chemical, biological, and materials analysis, supporting every stage of process and product development from routine testing to advanced research.

HOW FACILITY ACCESS WORKS

SAMPL operates on an autonomous access model. New users complete an in-person induction and equipment training before being granted independent access to the lab and its instrumentation.

MiLabs resident companies receive a 20% discount on all instrument bookings.

Bookings and payments are managed through Monash's iLab platform, which allows users to reserve instruments, submit requests and track usage online. Once trained, you book what you need and get on with the work.

If you don't have the staff to run the work yourself, the **Industry Innovation Program** lets you work with a supervised Monash student to carry out the analysis using SAMPL equipment, as part of a structured industry project.

To get started, get in touch via our expression of interest form below and we'll work with you to get you set up.

WHAT IS SAMPL

SAMPL enables deep-tech companies and researchers to accelerate applied R&D with direct access to industry-grade analytical instruments, specialist expertise, and embedded student talent.

By removing the need for major capital investment, SAMPL provides a hands-on environment to develop, test, and scale complex processes with confidence.

WHY COMPANIES USE SAMPL

Companies and industry partners access SAMPL for the capability: analytical equipment, process development expertise, and pilot-scale infrastructure.

Students and researchers are embedded in applied projects through student talent programs, working on real commercial challenges inside an active R&D environment.

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MILABS SAMPL

IN PARTNERSHIP WITH AGILENT TECHNOLOGIES

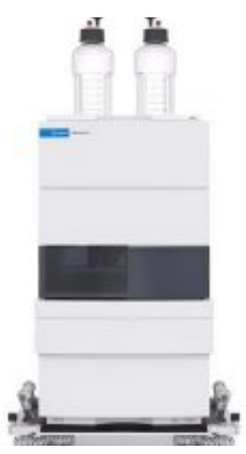
SAMPL's analytical instrumentation is supported through a formal technology partnership with Agilent Technologies Australia.

Agilent

The partnership gives startups, spin-outs and industry collaborators access to advanced analytical tools typically unavailable outside commercial laboratories, supporting faster testing, improved data quality and lower barriers to innovation.

CHROMATOGRAPHY

Separate and quantify complex mixtures, enabling precise analysis of organic compounds in liquid and gas samples.

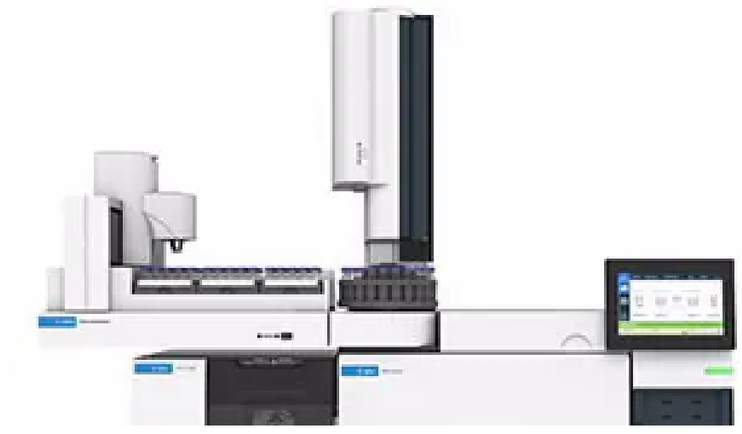


Agilent 1220
Infinity II HPLC

An integrated system for routine HPLC analysis. It is equipped with a gradient pump, C18 column, manual injector and variable wavelength detector.

Agilent Intuvo 9000
GC-FID

The Gas Chromatography (GC) System features a PAL CTC headspace and liquid autosampler, capillary S/SL inlet and flame ionisation detector (FID) for trace analysis of organic substances.



Agilent 8890
GC System with 5977C MS Detector

A GC/MS platform combining the 8890 GC with a 5977C Inert Plus Turbo EI MSD, 7693A autosampler, and JetClean technology to deliver automated, high-confidence identification and quantification of volatile and semi-volatile compounds.

SAMPLE PREPARATION & WET CHEMISTRY

The laboratory features a full suite of general lab equipment for sample preparation and wet chemistry, including equipment and instruments for weighing, mixing, heating, filtration, centrifugation, incubation, autoclaving, evaporation and safe chemical handling. This equipment is used to prepare samples accurately, consistently and ready for high-quality analysis.

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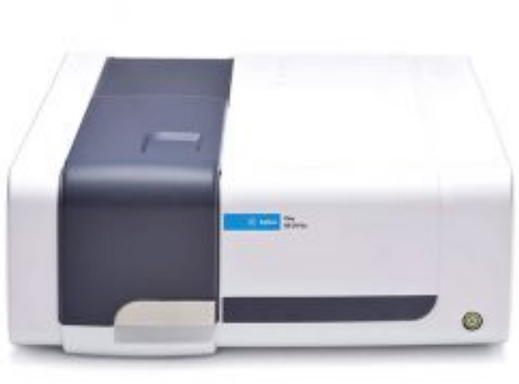
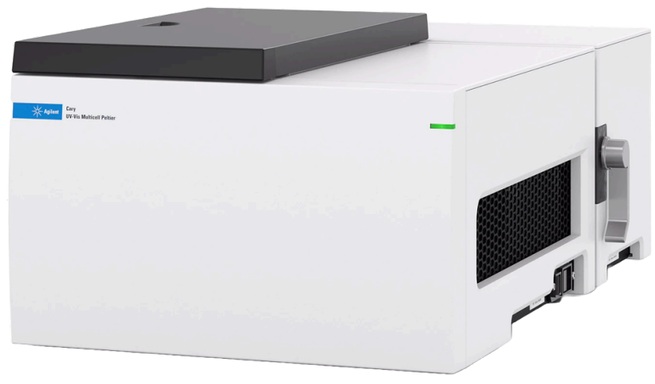
MOLECULAR & ATOMIC SPECTROSCOPY

Fast, accurate absorbance, transmission, and optical measurements that enables chemical identification from trace elements to molecular fingerprints in solids and liquids.



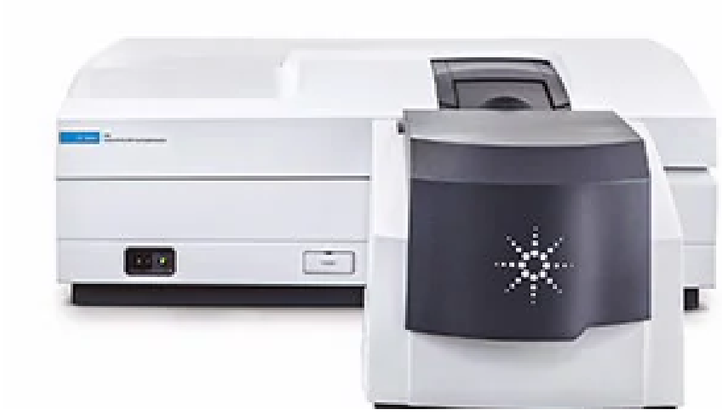
Agilent Cary 60 UV/Vis Spectrophotometer

This spectrophotometer supports a wide range of applications, including QA/QC testing, DNA/RNA and protein quantification, reaction kinetics, and academic teaching. It has flexible sampling options for cuvettes, fibre-optic probes, and microvolume samples down to <4 µL.



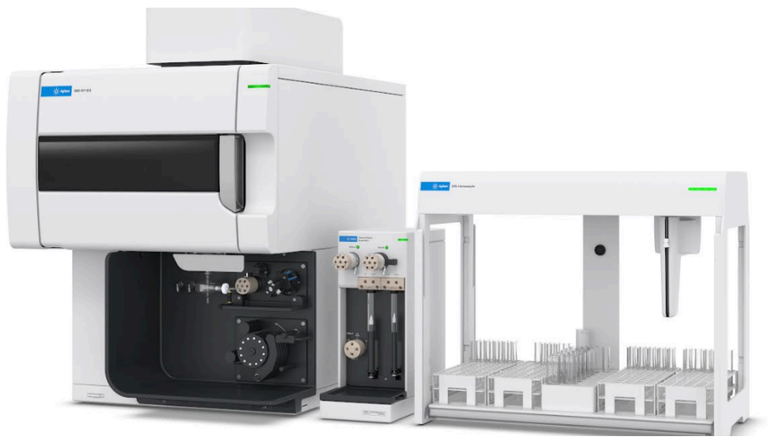
Agilent Cary 3500 UV/Vis Spectrophotometer

This system combines high-throughput multicell measurements, precise water-free Peltier temperature control and flexible sampling with the sipper functionality. It enables simultaneous multi-sample and multi-temperature experiments, versatile liquid and solid sample analysis.



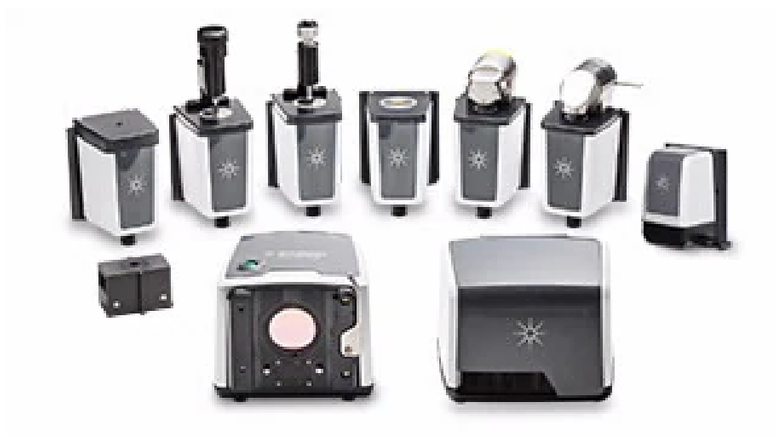
Agilent Cary 7000 UV-Vis-NIR Spectrophotometer

A high-end UV-Vis-NIR spectrophotometer with an unprecedented 10 Abs range. Enhanced with the Universal Measurement Accessory (UMA) and External DRA 2500 integrating sphere for advanced materials characterisation.



Agilent 5800 VDV ICP-OES Spectrometer

A high-performance ICP-OES system for rapid multi-element analysis, enhanced with an SPS 4 autosampler and ADS 2 auto-dilutor to enable automated, high-throughput, and reproducible elemental workflows.



Agilent Cary 630 FTIR Spectrometer

A compact FTIR spectrometer for fast material identification, quantification, and routine analysis. Equipped with Diamond ATR, Transmission, and DialPath variable pathlengths accessories for flexible solid and liquid analysis.

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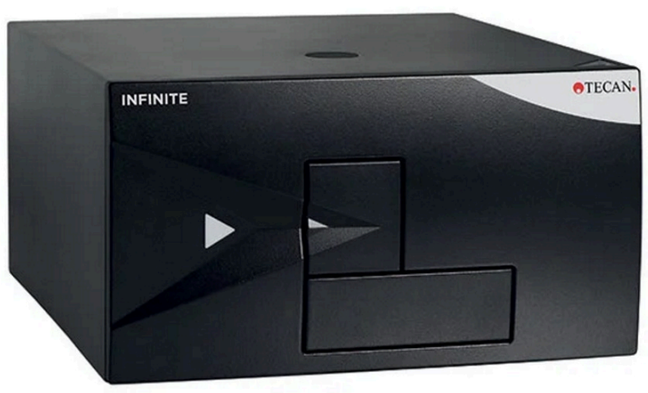
MOLECULAR BIOLOGY & INCUBATION

DNA amplification, controlled growth, and reproducible preparation of biological samples.

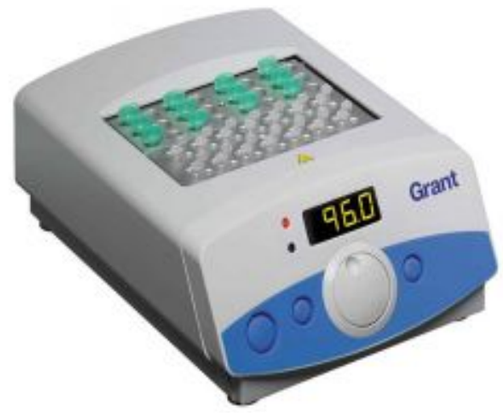
Thermo Fisher Veriti 96-Well Thermal Cycler

Featuring a 0.2 ml block format, an easy-to-use graphical touchscreen interface and is most commonly used to amplify segments of DNA via the polymerase chain reaction (PCR).



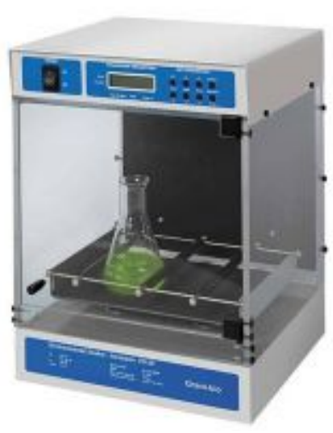
Tecan Infinite 200 PRO Multimode Microplate Reader

This microplate reader supports multiple measurement techniques. It uses either monochromators or filters and has a modular design for upgrades. It is compatible with 6–384 well plates, PCR plates, cuvettes, and NanoQuant plates.



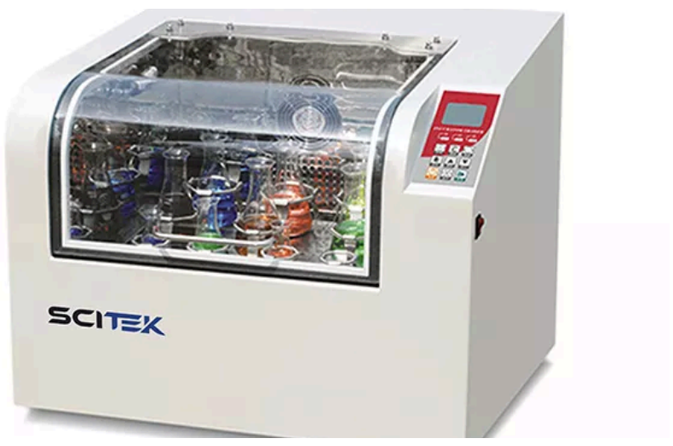
Grant Dry Heating Block - QBD1 and QBD2

Two dry heating blocks are available with a temperature range of 25 to 130 °C. There are 6 interchangeable blocks available with size from 0.2ml microtube up to 24 mm diameter tubes.



Grant ES-20 Compact Shaker-Incubator

A versatile programmable bench-top shaker-incubator for mixing and incubating biological fluids, samples, cell cultures and tissues.



Scitek Benchtop Constant Temp Shaking Incubator

This incubator combines controlled heating (approx. RT+5 to 65 °C) with orbital shaking (typically 20–300 rpm) and uses forced air circulation for uniform temperature. It supports flask-based sample handling and includes programmable control of temperature, speed and time.

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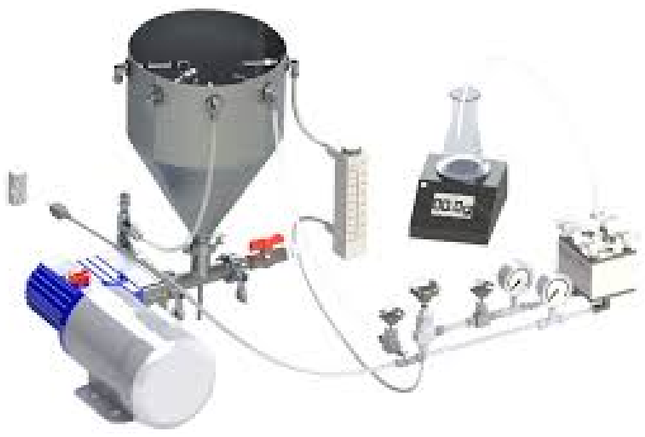
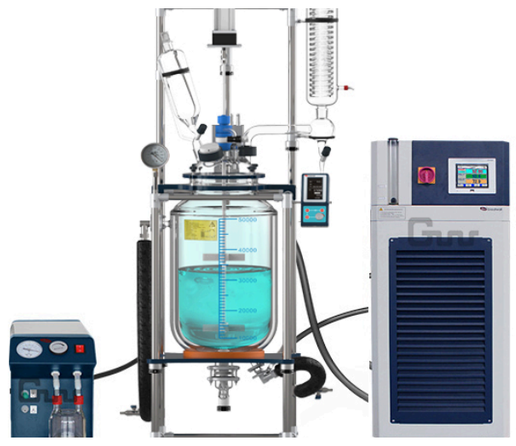
PROCESS DESIGN AND SCALE-UP

Paired bench- and pilot-scale process equipment to support scalable process development, de-risking, and translation from laboratory studies to pilot-scale operation under industry-relevant conditions.



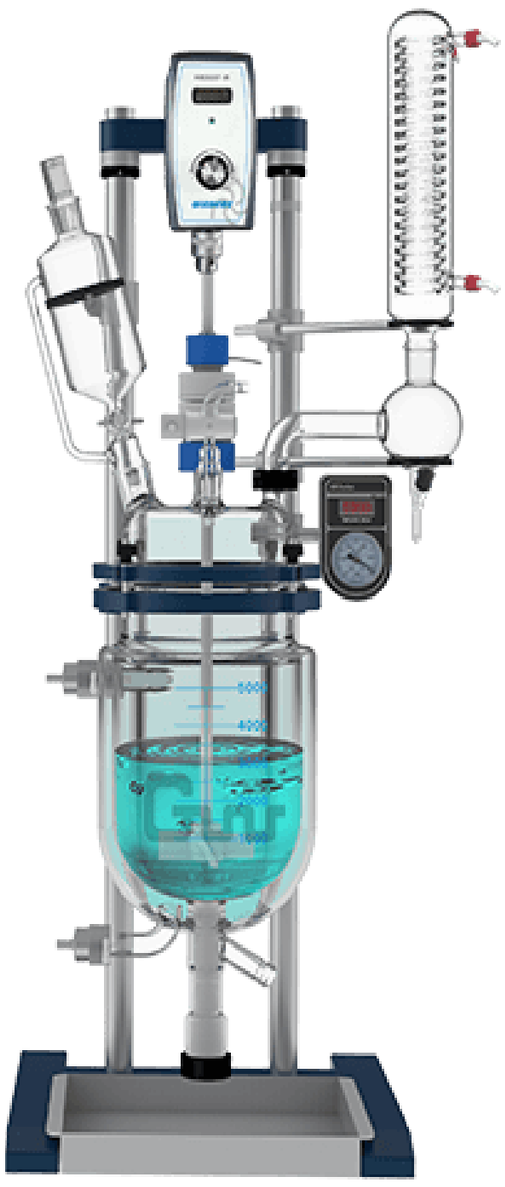
Cross/Tangential Flow Apparatus

A laboratory cross-flow membrane system for rapid flat-sheet membrane screening and process development. Enables evaluation of membrane performance, including flux, selectivity and fouling behaviour.



50 L Jacketed Glass Reactor

A pilot-scale jacketed glass reactor for scale-up studies and pilot-scale process evaluation. Enables assessment of mixing, heat transfer and process control and robustness at increased volumes representative of industrial operation.



2 L Jacketed Glass Reactor

A bench-scale jacketed glass reactor for controlled reaction development and process optimisation. Suitable for studying reaction kinetics, heat transfer, mixing and operability under well-defined temperature and agitation conditions.

UF/RO Pilot Plant

A pilot-scale cross-flow membrane system, designed for scale-up and validation of membrane-based separation processes.

The apparatus supports full-scale individual membrane testing under continuous, industrially relevant flow, pressure and operating conditions, enabling performance verification, operational stability testing and process integration studies.

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