



Centre for GEOANALYTICAL MASS SPECTROMETRY



World-class analytical equipment enabling researchers, institutions, government, industry partners and community clients to expand research across traditional boundaries.

The Centre for Geoanalytical Mass Spectrometry (CGMS) is a fully integrated research facility at The University of Queensland that is dedicated to the analysis of stable and radiogenic isotope ratios and trace element abundances in natural and man-made materials.

Radiogenic Isotope Facility (RIF)

The unique \$5 million facility is a HEPA-filtered "ultra-clean" laboratory with a centrally-controlled air-handling system providing proven ultra-low analytical blank performance for highly sophisticated trace element and isotopic analysis.

Equipped with facilities to digest a variety of specimens, chemically separate and purify elements of interest, RIF houses a range of strategic mass spectrometers and a laser ablation system for various elemental/isotope analyses and dating for earth, environmental, archaeological, biological, biomedical, and forensic science research

Stable Isotope Geochemistry Laboratory (SIGL)

This is one of the most comprehensive laboratories in the Southern Hemisphere, enabling the complete cycle from preparation to analysis of stable isotopes in geological and environmental samples.

The SIGL has a long history of analysing light stable isotopes (C, H, O, N, S) and currently houses four isotope ratio mass spectrometers with online preparation systems, supporting ground breaking multidisciplinary research in the earth, environmental, biological, chemical, medical and material sciences.

Environmental Geochemistry Laboratory (EGL)

The laboratory complements the RIF by offering major and trace element analysis with ICP-OES and ICP-MS as the main analytical instruments. It hosts a range of small portable instruments and devices for field sampling and analysis of waters.

The EGL offers a specialised service for difficult samples and provides elemental analyses of environmental (rocks, sediments, waters), synthetic (slag, alloys, pharmaceuticals) and biological (blood, proteins) samples.

CRICOS Provider Number 00025B

The Centre for Geoanalytical Mass Spectrometry has entered into a partnership with Griffith University and QUT with the creation of the Brisbane Geochronology Alliance, which aims to make Brisbane a global hub for isotope geochemistry and geochronology.

Laboratory	Equipment summary	Pricing contacts
Available to all researchers and commercial clients		
Radiogenic Isotope Facility (RIF)	<ul style="list-style-type: none"> • Four mass spectrometers: <ul style="list-style-type: none"> • Nu Plasma HR multi collector-inductively coupled plasma mass spectrometer (MC-ICP-MS) • Nu Plasma II MC-ICP-MS with 16 Faraday cups and 6 secondary electron multipliers • Thermo X-Series II quadrupole inductively coupled (Q-ICP-MS) • Thermo iCAP-RQ Q-ICP-MS for high-precision rapid multi-element analysis • ASI RESOlution SE laser system for in situ high-spatial resolution isotope and elemental analysis when coupled with the Nu Plasma and Thermo ICP-MS machines • Six positively pressured chemistry laboratories • HEPA and ULPA fume hoods • Sartorius analytical balance and Cahn microbalance • Acid distillation system • De-ionised water plant • Microwave digestion system 	<p>Professor Jian-xin Zhao E: j.zhao@uq.edu.au</p> <p>Dr Yue-xing Feng E: y.feng@uq.edu.au</p>
Stable Isotope Geochemistry Laboratory (SIGL)	<ul style="list-style-type: none"> • Four stable isotope mass spectrometers: <ul style="list-style-type: none"> • Isoprime-Agilent gas chromatography-combustion-isotope ratio mass spectrometer (GC-c-IRMS) optimised for C and H isotope analysis of mixed gases • Isoprime continuous flow isotope ratio mass spectrometer (CF-IRMS) with elemental analyser for C, N, S isotope analysis of geological and biological samples (optimised for multiple S isotope analysis) • Thermo Delta V Advantage CF-IRMS with gas bench for DIC and thermal combustion elemental analyser for O and H isotopes on solids and liquids • Isoprime dual inlet isotope ratio (DI-IRMS) with Multiprep for high precision H and O isotope analysis of waters and C and O isotope analysis of carbonates • Carbonate extraction line • Mineral hydrogen and fluid inclusions extraction line • Experimental vacuum extraction line 	<p>Professor Sue Golding E: s.golding1@uq.edu.au</p> <p>Kim Baublys E: k.baublys@uq.edu.au</p>
Environmental Geochemistry Laboratory (EGL)	<ul style="list-style-type: none"> • Perkin Elmer 8000 8300 ICP-OES • Agilent 7900 Q-ICP-MS • Katanax K2 Prime automatic fluxer • Balance room • Two acid resistant fume hoods • Laminar flow cabinet • Acid cleaning room • Sample preparation laboratory 	<p>Marietjie Mostert E: m.mostert@uq.edu.au</p>