

Laser ablation cell at PCIGR

In-Situ and Microanalysis Services

Welcome to the Pacific Centre for Isotopic and Geochemical Research, at the University of British Columbia in Vancouver, Canada. PCIGR is an all-in-one research facility that provides analytical services to investigators from academia, government and industry, both across Canada and around the world.

Why In-situ or Microanalysis?

Microanalytical techniques, such as laser ablation or microdrilling, allow for elemental and isotopic analysis to be performed directly on solid samples and samples of irregular size and shape, i.e., in-situ analysis.

Major advantages of in-situ analysis include:

- **Sample preservation:** Minimally invasive method that provides high data quality, while limiting loss or destruction of sample material;
- **Spatial resolution:** Probing of sample material in the micron range;
- **Time-resolved analysis:** Determination of a record of temporal variation within a specimen.

Laser Ablation ICP-MS at PCIGR

PCIGR is equipped with two excimer laser ablation systems that are connected to respective ICP-MS instruments. Elemental and isotopic analyses can be performed separately or in tandem via the split-stream method.

Laser Ablation System:	RESOLUTION M-50-LR	NWR193UC
Laser source	Coherent COMPex Pro 110 UV excimer	Coherent ExciStar XS ArF excimer
Wavelength	193 nm	193 nm
Spot size	5–200 μm	2–150 μm
Sample cell	Laurin Technic two-volume	TwoVol2 two-volume
Elemental analysis and/or geochronology via	Agilent 7700x quadrupole ICP-MS Nu Instruments AttoM HR-SF-ICP-MS (low level)	Thermo Scientific Element2 HR-SF-ICP-MS
Isotopic analysis via	Nu Instruments AttoM HR-SF-ICP-MS	Nu Plasma multicollector ICP-MS



Our Capabilities

PCIGR can analyze the following types of sample materials* via in-situ laser ablation ICP-MS:

- Rocks and mineral mounts
- Drill cores
- Thin and thick rock sections
- Microscope slides and thin sections
- Archaeological and modern bones and teeth
- Lithic archaeological materials

* Please note that PCIGR is not equipped to accept radioactive materials.

In-situ and microanalyses completed at PCIGR have the following applications:

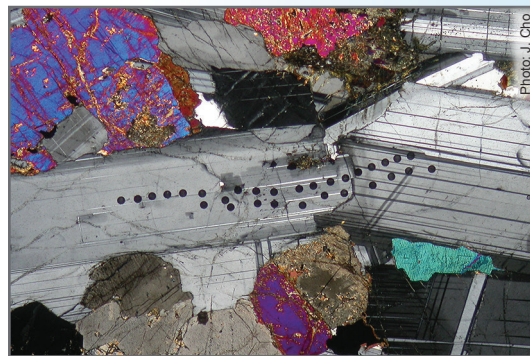
- Geochronology of deep time
- Sclerochronology
- Mineral exploration
- Environmental research
- Human health
- Archaeological science

Consult our other brochures for related capabilities, or visit our website below for more information.

- **PCIGR: All-in-One Analytical Services**
- **Sample Preparation Services**
- **Trace Element Analysis Services**
- **Isotopic Analysis Services**
- **Geochronology Services**

Our Commitment

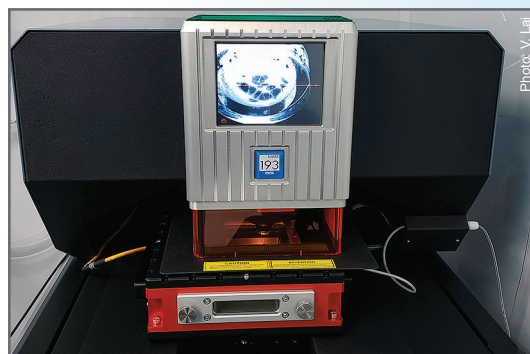
PCIGR is committed to working with you to achieve the best outcomes for your project. Contact us with your analytical and research needs.



Laser ablation pits on a thin section



RESOLUTION M-50-LR laser ablation system



NWR193UC laser ablation system



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