

REMOTE ACCESS TO THE DALHOUSIE ELECTRON MICROPROBE LABORATORY USING THE *VIEW-IT-YOURSELF* SYSTEM



JEOL JXA-8200 SUPERPROBE

At the heart of our laboratory is the JEOL JXA-8200 Superprobe™,



equipped with 5 WDS spectrometers that are able to analyze all the elements between Boron and Uranium, using both the JEOL analytical software and the *Probe for EPMA™* software package. The microprobe is also equipped with a state-of-the-art, *Thermo-Noran System 7™ EDS SDD* (silicon drift detector), for quick identification of elements and phases, as well as for creating elemental maps at the recon level. Additionally, the microprobe carries a low-resolution *GATAN CL* system (cathodo-luminescence) that allows for visual mapping of certain trace elements at low concentrations.



 **Probe Software**

A NEW WAY TO ANALYZE

Traditionally, getting fully quantitative microprobe analyses and SEM images meant travelling to a university facility equipped with a microprobe, along with all the inconveniences and additional expenses associated with long-distance travelling. Other than paying for analytical time, the only expense you will incur under this new paradigm is the shipping cost of your samples to our laboratory.

At the Dalhousie University Electron Microprobe Laboratory, we have implemented our new “*View-It-Yourself*” remote usage system, that allows anyone with access to high-speed internet to operate our JEOL JXA-8200 Superprobe™ in real-time, even from a cellphone! Being able to operate the microprobe from your own lab or office will permit you a level of flexibility and efficiency that you won’t have experienced doing analyses the traditional way.

Our microprobe technologist will provide you with all the training needed to confidently operate the microprobe independently, using a *virtual*, hands-on approach. You can rest assured that our microprobe technologist is never more than the click of a mouse away, ready to offer expert technical support by simultaneous log-in to your active microprobe session, and by audio access.

OUR CAPABILITIES

Our *View-It-Yourself* system allows you to access the total functionality of our JEOL 8200 using both JEOL, Probe for EPMA™ and Noran System 7™ EDS software packages. Those capabilities include:

- Quantitative WDS Analysis for both major, minor and trace elements
- Semi-quantitative EDS Analysis and reconnaissance, compositional mapping
- High-resolution WDS X-ray Compositional Mapping
- Qualitative and Linescan Analyses, generating compositional profiles across samples
- SEI, BEI and TOPO Imaging
- Phase identification

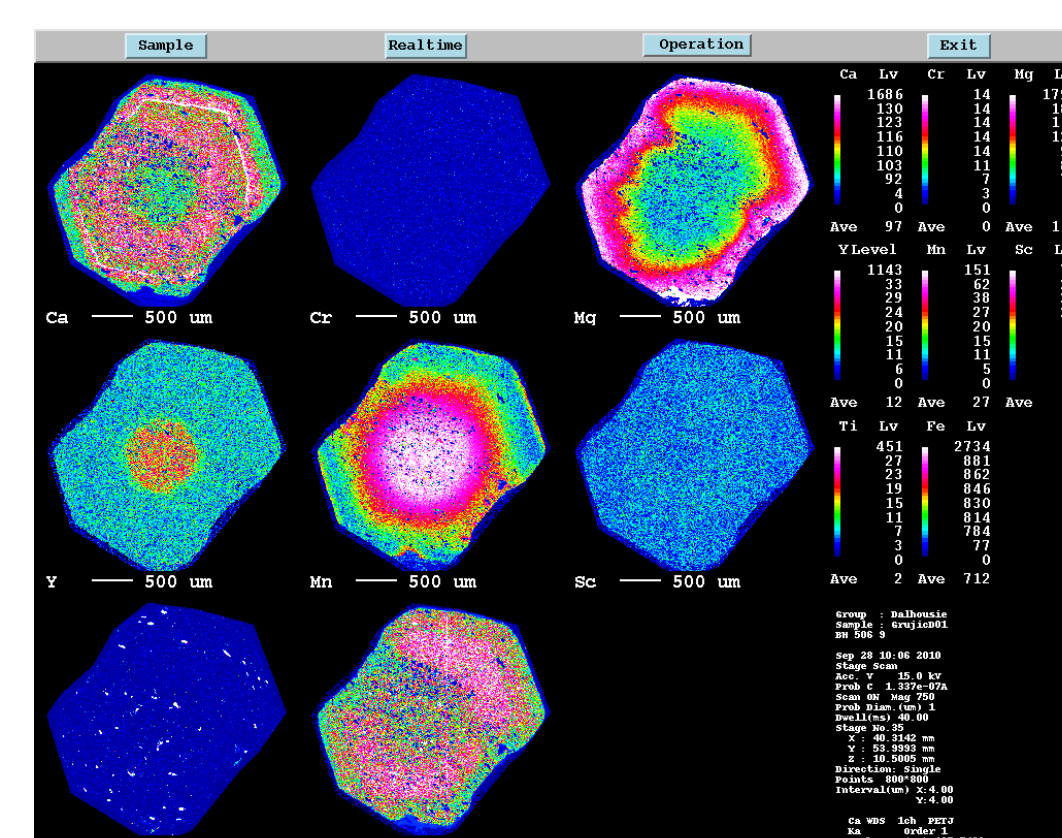
Additionally, we offer **low-cost X-ray Powder Diffractometry** services for bulk-rock samples and for mineral separates – a perfect match with EPMA analysis to confirm

compositions of individual phases.

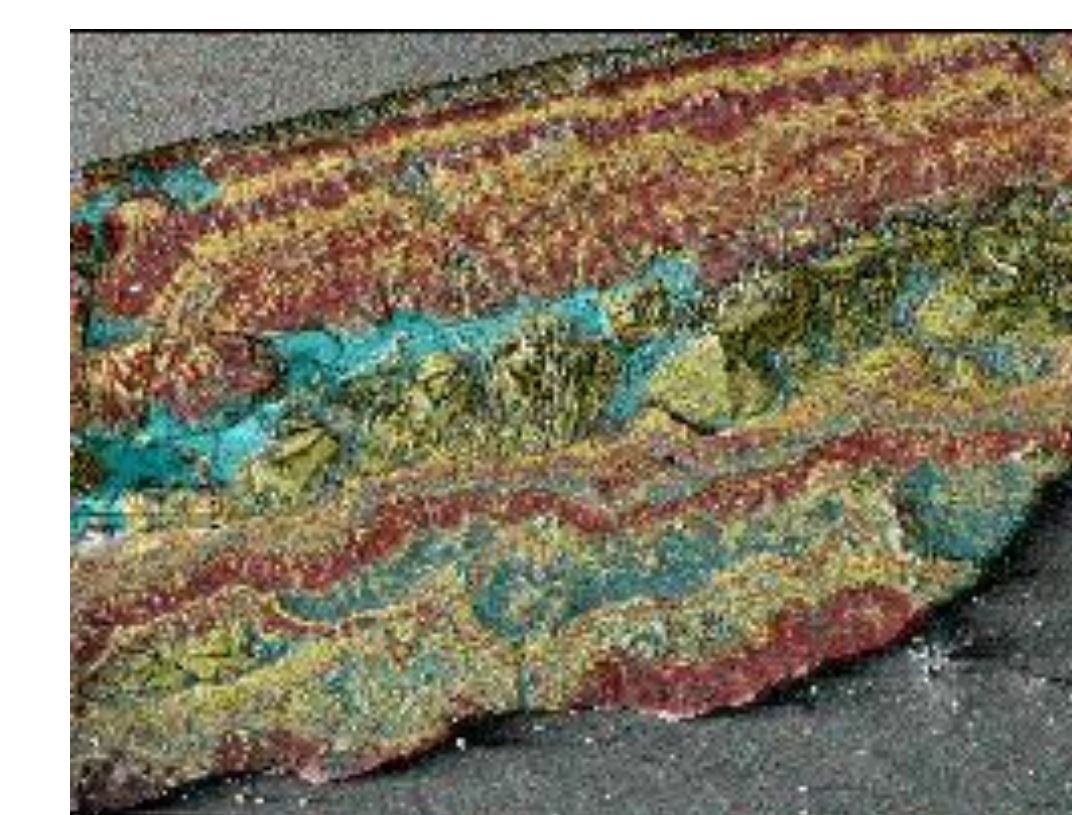
APPLICATIONS FOR EXPLORATION

We offer a wide range of applications for **mining** and **exploration**, for example:

- **Paragenetic relationships** between minerals on a small scale
- **Assessing mineralogical and geochemical changes** with distance from ore bodies
- Direct **imaging supplement** to optical techniques, at much higher magnification
- Fully **quantitative analysis of REEs**, and associated age-dating of monazites
- Analysis of **elemental and mineralogical distribution** within ore and host bodies
- Enhanced **targeting of ore bodies** via indicator mineral analysis
- Ability to **analyze** samples **non-destructively**
- Analysis of rock chips from **core samples** without the need to prepare a thin section
- Economical **phase identification** using powder XRD



The X-ray compositional map shown at the left is of a zoned garnet that contains a significant amount of Yttrium (Y) and trace amounts of Scandium (Sc). This type of information is not available using traditional optical microscopy. The Yttrium in this garnet has been used as an indicator that REE-bearing minerals were present in the host rock, thereby helping to target a potential ore body.



The image to the left shows an EDS X-ray reconnaissance map of an alteration sequence of an Fe-bearing phase, enhanced with false-colouration of each of the elements in the alteration products. This type of map provides valuable information about the Eh- and pH-conditions that gave rise to this intricate alteration sequence that might have been missed, otherwise.

ADVANTAGES

The Dalhousie Electron Microprobe Laboratory is able to offer the following advantages to our clients, largely via our *View-It-Yourself* remote access system:

- The VIY system is more economical and more efficient than traditional analysis, and will reduce your bottom-line costs for analysis.
- Using the VIY system eliminates travel costs and travel time.
- 24-hour accessibility to view results at your convenience – get ‘same-day’ results.
- Live-time technical support with simultaneous login using free software.
- Non-destructive testing methods for EPMA (electron probe microanalysis).
- One-stop shopping with both EPMA and powder XRD available.
- Use the VIY system to enhance your corporate learning culture; sponsor students to train in a turn-key program; retain in-house knowledge while advancing your strategic goals.
- By having employees trained on the VIY system, your company will retain in-house continuity of skills, and have opportunities for career development.
- We offer individually tailored analytical profiles so that you only pay to analyze the elements you *want* to analyze.
- We offer a half-day **FREE** of charge of microprobe time to prospective clients either in-person or via the VIY remote access system.
- We offer thin-section preparation services as well as carbon-coating services.

Remote analysis using the VIY system will help keep you on the cutting edge of technology, help reduce your analytical costs and allow you to use your time more efficiently.

CONTACT US!

Please contact our Microprobe Technologist, Dan MacDonald, to arrange your FREE ½ day session on our microprobe. Dan will be glad to answer any questions you might have regarding our technology and to discuss your analytical needs.

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