Northern Illinois University Micro-compositional Analysis Lab Pricing

Please contact Guillaume Girard or Josh Schwartz before sending samples
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X-Ray Fluorescence (XRF):

There are three general types of measurement and analysis of samples. Accuracy of results and analysis time increases as you go down the list.

1: Standardless: Uses XRF internal fundamental parameters to calculate the abundance of elements
2: Standard Reference: A standard with known values close in physical properties, and elemental composition and abundance to the unknown sample is measured and compared to quantify the unknown.
3: Calibration Curve: A series of standards that bracket the unknown sample is measured and compared to quantify the unknown.

Sample volume and preparation varies depending on your sample material and what you are measuring. If your sample requires preparation, we can advise on the method required or for an additional cost, we can perform the prep.

Sample Material	Measurement Type	Cost Per Sample (USD)*		
		NIU	External Academic	Commercial
Powder, Liquid, Film, Solid	Bulk	$40**	$50**	$80**
Solid	Points / Mapping	Contact Us		
Technician Time				$100 per hour

*Academics that wish to be trained and run their own samples may be charged a reduced rate.

**If using a reference material or calibration curve for these samples, some technician time will be involved to design, test and implement the appropriate procedure. The time needed to conduct that design, testing and implementation procedure will depend on your samples and elements of interest. Samples with more than 10 elements to be measured will be charged at different rates. Contact us with sample information for an estimate.

Scanning Electron Microscope (SEM) with Energy Dispersive Spectrometry (EDS):

SEM use is charged per the hour. The cost includes normal sample preparation, which is not part of the operation time. Academics and students that wish to be trained and run their own samples may be charged a reduced rate.

	Cost Per Hour (USD$)		
	NIU	External Academic	Commercial
SEM use	$50	$60	$100
Technician Time			$100

Powder X-Ray Diffraction (XRD):

XRD use is charged per sample. The cost includes normal sample preparation.

	Cost Per Sample (USD$)*		
	NIU	External Academic	Commercial
XRD use	$25	$30	$50
Technician Time			$100

*Academics that wish to be trained and conduct their own analyses may be charged a reduced rate.

ICP-MS for aqueous solutions

Sample may comprise water or digested materials such as biological tissues, soils, rock samples, etc... It is the user's responsibility to ensure that samples are ready for ICP-MS analyses, however we will provide guidance on sample preparation. In brief, samples need to be:

1. Free of solids and particulate matter (filtration and/or microwave digestion are usually advised), acidified (typically in a ~2% HNO_3 matrix) so to ensure sample homogeneity and dissolved state of the elements of interest. The analysis of some elements may require a different acid solution.
2. Of a known general concentration (expect to be able to provide a range of anticipated concentrations of the main dissolved cations –even those that you may not request to be analyzed. Indeed, **your matrix may be another person's trace element**, and some elements in high concentrations could be difficult to wash out from the instrument and interfere with a future user's research. For that reason, it is imperative that the instrument remains clean and that we know what type of material we are analyzing.

	Cost Per Sample (USD$)		
	NIU	Academic	Commercial
Instrument use *	$25-100	$30-120	$50-200
Technician time **			$100
Minimum fee for new project ***	$300		

* Charge per sample is commensurate with number of elements requested, from a minimum charge of $25 for one element (*NIU rate*). We offer "packages" such as major cations ($30/sample -*NIU rates*-) or EPA-regulated toxic trace metals ($40/sample -*NIU rates*-), or any user-customized element list, which may include up to ~60 elements. Please inquire with your element list for a quote.

** Technician time is charged for projects which need extra sample processing time due to improper preparation by user, or for samples of unknown composition that may require a preliminary qualitative analysis, for instance by XRF.

*** To reflect the low sample throughput and method development inherent to projects that are new to us, a flat rate of $300 is charged in lieu of the fees per sample, should these amount <$300. Returning customers repeating an existing method on additional samples will be charged per sample.

LA-ICP-MS, for solids or glasses

The laser ablation system can accept petrographic thin sections, 1-inch epoxy mounts, and 1-cm mounts. Samples need to be smooth and flat but microprobe-quality polishing is not a requirement.

We offer bulk analyses of powdered samples, which we charge per sample using slightly higher rates than we do for solution work by ICP-MS, to reflect lower sample throughput and higher instrumentation use.

	Bulk sample analysis, LA-ICP-MS, Cost Per Sample (USD$)		
	NIU	**Academic**	**Commercial**
Instrument use *	$30-100	$40-120	$60-200
Technician time **			$100
Minimum fee for new project ***	$300		

For all other projects, charges are assessed per hour of instrument use. Users should discuss their projects for an estimate of time required. The most time-consuming part of LA-ICP-MS often involves setting up ablations on the samples, and is to be budgeted in instrument use time. It is preferred that users set up their own ablations (first assisted with technician, or autonomously after adequate training). Reduced hourly rates will be offered to trained academics and students using the instrumentation system on their own.

	Other analysis types, LA-ICP-MS, Cost Per Hour (USD$)		
	NIU	**Academic**	**Commercial**
Instrument use *	$80	$100	$160
Technician time **			$100
Minimum fee for new project ***	$300		

* Charge per sample/per hour is commensurate with number of elements requested and sample complexity. Please inquire with your element list for a quote.

** Technician time is charged for projects which need extra sample processing time due to improper preparation by user, or for samples of unknown composition that may require a preliminary qualitative analysis, for instance by XRF.

*** To reflect the low sample throughput and method development inherent to projects that are new to us, a flat-rate of $300 is charged in lieu of the hourly fees, should these amount <$300. Returning customers repeating an existing method on additional samples will be charged the hourly rate.