Rates of Analyses

LA-ICP-MS/MS lab
Department of Geology and Geological Engineering
Colorado School of Mines, Golden, CO 80005, USA

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Trace element analysis of minerals:

1. External commercial: $25 per spot; minimum $1,500 per day
2. External collaboration (co-authorship): $12 per spot; minimum $1,200 per day
3. Internal: $12 per spot; minimum $1,000 per day

Note: The composition of one of the major element is needed as the internal standard. Please discuss with us about your plan for major element analysis.

Trace element mapping of minerals:

1. External commercial: $625 per hour; minimum $1,500 per day
2. External collaboration (co-authorship): $300 per hour; minimum $1,200 per day
3. Internal: $300 per hour; minimum $1,000 per day

Note: A) The composition of one of the major element is needed as the internal standard to generate ppm maps; otherwise the maps will be in cps. B) in ppm maps the composition of inclusions is not accurate. C) the minimum can be met together with spot analysis in a day.

U-Pb dating of zircon:

1. External commercial: $30 per spot
2. External collaboration (co-authorship): $20 per spot
3. Internal: $15 per spot

- For an igneous crystallization age, 15 spot analyses may be sufficient if they cluster together on the concordia, i.e., all the zircons were from the latest melt without inherited zircons. Some intrusive rocks (e.g., coarse-grained granites in NE Queensland, Australia) may contain abundant inherited zircons and therefore require many more spots analyses to determine the age.

Discounts for large number of analysis:

Discounts for large number of analysis are available. Please discuss with us.
Sample preparation:

We prefer to use one-inch diameter epoxy mounts made by the Automated Mineralogy Lab of our department. [https://geology.mines.edu/laboratories/automated-mineralogy-laboratory/](https://geology.mines.edu/laboratories/automated-mineralogy-laboratory/) They are typically free of contaminations and with low backgrounds for LA-ICP-MS analysis. If a user provides the mount(s), the user will be responsible for costs related to complications, for example high backgrounds that take extra time to deal with, which may or may not happen.

We can also analyze some minerals in thin/thick sections. Depending on the mineral, a standard 30-micron thin section may or may not be sufficient. A 100-micron thick section will most likely be adequate.

**External users:** If you are not coming to select your laser spots for analysis, please provide detailed sample map and photomicrographs so that the spots may be quickly located by our operators. Please contact Chris Van Hoozen ([cvanhoozen@mymail.mines.edu](mailto:cvanhoozen@mymail.mines.edu)) or Shiqiang Huang ([shiqianghuang@mymail.mines.edu](mailto:shiqianghuang@mymail.mines.edu)) for detailed instructions and examples. We recommend spot size of 30 or 40 microns, but other sizes are also available.

For analytical details, please contact Zhaoshan Chang ([chang@mines.edu](mailto:chang@mines.edu)).