



## **CAMECA IMS 7f-GEO: specialized SIMS tool for Geosciences**

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SIMS is applied to a wide variety of applications in Geosciences, as it offers both sensitivity and *in-situ* isotopic and/or elemental analysis of solid samples.

CAMECA IMS 1280 large SIMS instrument offers outstanding performance for the entire application range, as it provides the highest transmission at high mass resolution, and a versatile multi-collection system. However, this tool can sometimes be seen as oversized for a laboratory with a limited application range. Therefore CAMECA has introduced the IMS 7f-GEO, a compact SIMS model designed to meet the high precision / high throughput requirements of stable isotope and trace element analysis. The key features of this new instrument are:

- Quasi-continuous primary intensity record. This allows a more reliable primary beam drift correction (short and long term).
- Magnetic sector with fast peak switching capability: combination of magnetic and electrostatic beam deflection, applicable over the full mass range. It provides benefits in terms of precision and analysis throughput.
- Double Faraday cups detection: secondary ion detection system equipped with an EM and a pair of FCs with independent acquisition channels. This configuration makes possible to run analyses in a pseudo-bicollection mode well suited for stable isotope analysis.
- High precision Faraday Cup electrometer.

Typical IMS 7f-GEO analytical performance for stable isotope analysis ( $^{18}\text{O}/^{16}\text{O}$ ): for an analysis area of  $10 \times 10 \mu\text{m}^2$  and a total integration time  $< 60\text{sec}$ , a precision better than 0.5 per mil is reached (single analysis internal error and std. dev. over different runs). Detailed instrumental features and experimental data will be presented.