Extending the Potential for Isotopic Analyses in Geochemistry using a Rapid Scanning Magnetic Sector ICP-MS as well as a Multi-Collector ICP-MS

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Precise and accurate isotopic analysis remains a major demand of research and contracting laboratories, especially in the fields of Isotope Geochemistry and Nuclear Engineering. Recent improvements to Multi-collector ICP-MS have extended to capabilities of this technique and in most cases it will be the technique of choice.

To increase sample throughput and achieve ultimate performance instruments have to combine speed, reliability, flexibility and ease-of-use. The Nu Instruments AttoM® is a new generation, high-resolution magnetic sector ICP mass spectrometer which incorporates a number of novel and unique design features which can be applied to isotopic analysis.

With the so-called "FastScan Ion Optics" extremely fast peak jumping acquisitions can be performed. These peak jumping acquisitions can be performed over a 40% relative mass range without changing the magnetic field. Jumping times between peaks are <20 microseconds and dwell times for peaks can be set individually with a minimum dwell time of 100 milliseconds. This offers the great flexibility to adapt application parameters for best analysis precision.

This paper will present HR-ICP-MS data to illustrate the instrument's potential for rapid isotopic ratio acquisition for a variety of applications. Examples will include various laser ablation applications on different zircon standards.