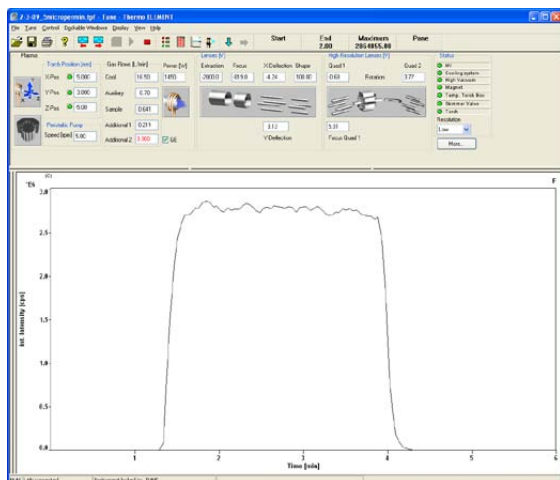


microFAST MS Expanding the Capabilities of ICPMS

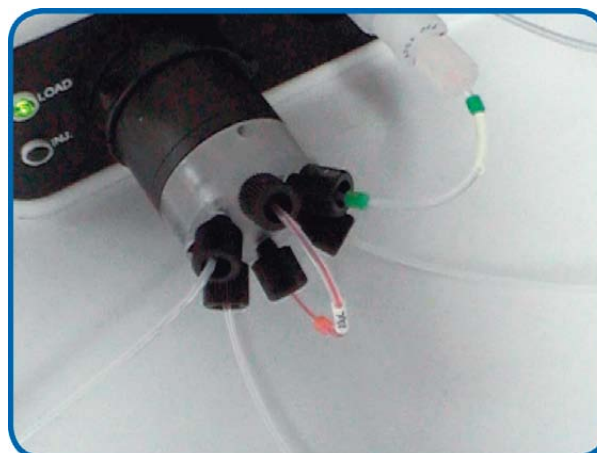
Introduction

The microFAST MS system is a flexible, highly configurable, software controlled, sample introduction system that extends the capabilities of ICPMS to include the analysis of samples that were considered too difficult or impossible.

The fully automated microFAST MS system makes it possible to directly analyze ultra-low volume samples, viscous samples, organic solvents, precious micro-samples, aggressive chemicals that can attack pumps and ICPMS system components.



microFAST MS injection of 20 μ L sample providing over 2 minutes of steady signal for multi-element or isotopic analysis.



A 20 μ L sample is accurately loaded onto a loop and injected into the ICP-MS using a high-precision micro peristaltic pump.

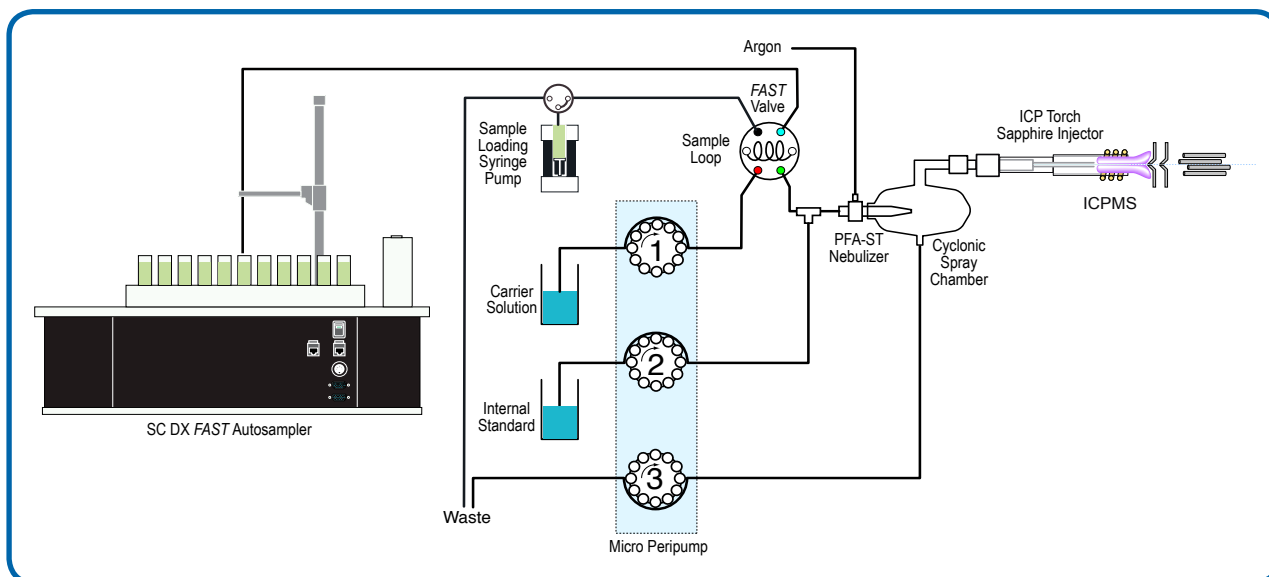
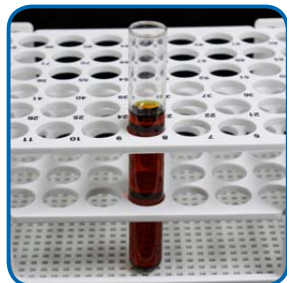


Figure 1. microFAST MS system set-up



Ultra-low total volume (tens of microliters) samples

The system is programmable to take up 100% of the sample and introduce it at precisely controlled flow rates as low as 1-5 μL per minute. This produces a continuous steady-state signal for repeat multi-element analysis or precise isotope ratio measurement on a sample volume as small as 50 μL .



Viscous samples such as undiluted photoresist

- Eliminates contamination from dilution or sample preparation
- Improved signal stability by using precision, metal-free syringe pumps for sample introduction
- Uses *FAST* technology to eliminate contact between samples and the pump



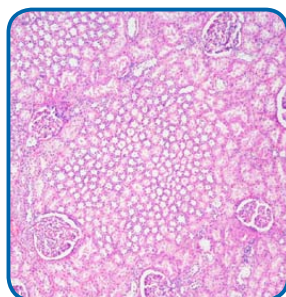
Volatile high-purity organic solvents

- Reliable sample introduction at 5 and 10 μL per minute allows samples to be analyzed using conditions similar to those used for water
- Reduced instrument drift, improved stability, and lower instrument maintenance
- SC Autosamplers offer an optional metal free piercing probe for samples that are covered to reduce contamination and evaporation



Climate research applications

- Particulates in seawater, reducing the sample volume 10x to 100x
- Elemental and isotopic ratio analysis of a single planktonic foraminifera
- Micrometeorite multi-element analysis



Clinical micro samples

- Elemental analysis of limited volume cell samples
- Metal uptake in living tissue
- Elemental analysis of premature infant blood