

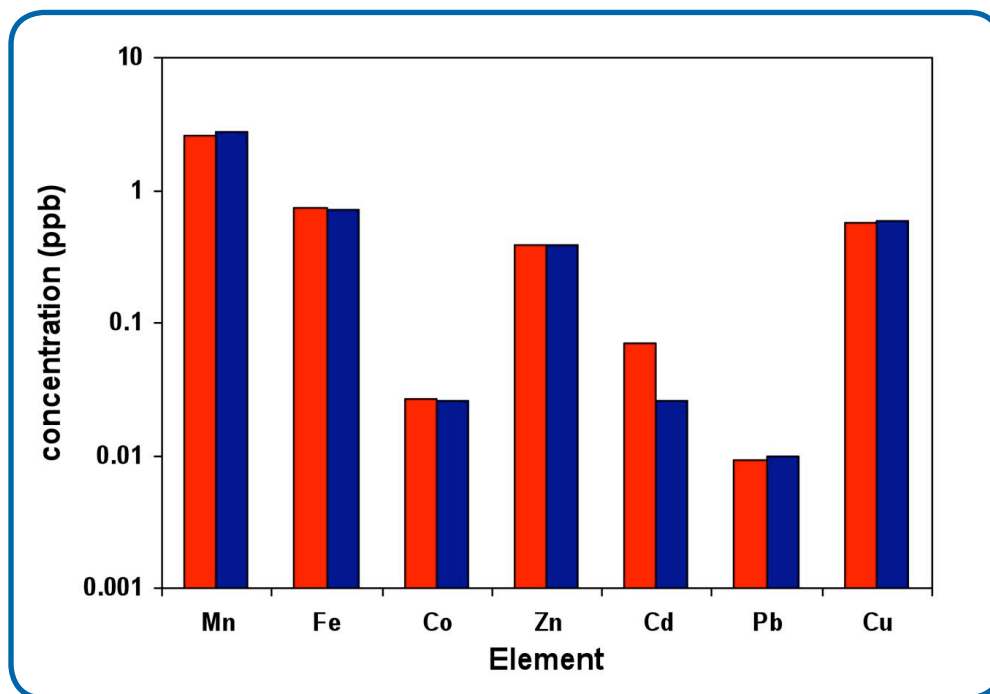
apexFAST

Elemental Scientific introduces the apexFAST, a compact, high performance sample introduction system for ICPMS and ICPAES. The apexFAST sample introduction system allows:

- Direct introduction of high-TDS samples at low single-digit microliter-per-minute flow rates for the direct analysis of samples such as undiluted seawaters and high-purity semiconductor-grade materials.
- Increased sensitivity up to 10x vs. standard sample introduction techniques
- Minimized drift otherwise caused by sample deposition on ICPMS cones or ICP injectors
- Precise introduction of micro samples using an optional o-ring-free quartz or PFA syringe pump
- Automatic matrix removal and pre-concentration for applications such as:
 - o Rare earth elements in seawater
 - o Uranium and trans-uranium elements
 - o Species-specific preconcentration (e.g. Se IV)



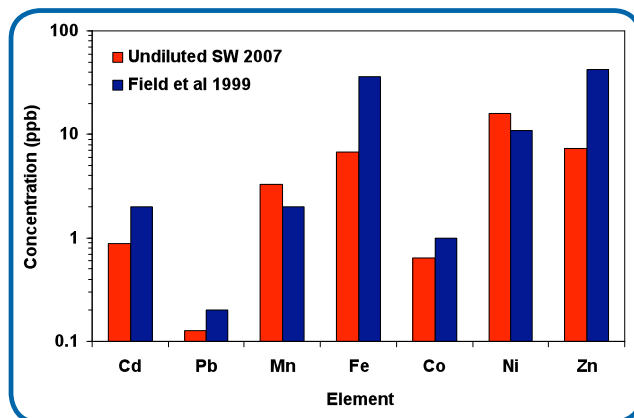
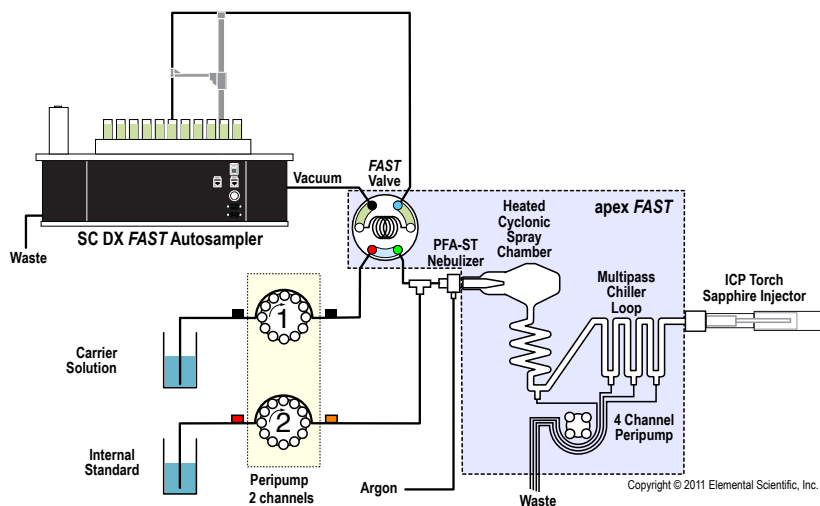
apexFAST: combination of an Apex inlet system with FAST injection valve



Measured (red) and certified (blue) values for CASS-4 standard using apexFAST.

Direct Analysis of Seawater

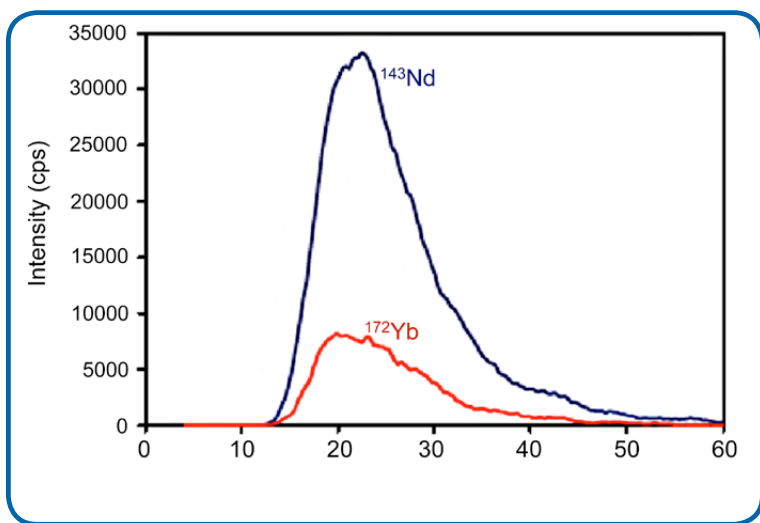
- Minimized sample handling and reagent related blanks
- Controlled low flow via syringe pumps
- Improved limits of detection and accuracy



Data showing improvement in limits of detection (red bars) of the apexFAST for the direct analysis of seawater.

SC-FAST for Preconcentration/Matrix Removal

- Replace loop with pre-concentration column
- Over 80 fold improvement in signal (4-fold from Apex; 20 fold from column)
- Simple method creation and control



REE elution profile, pre-concentrated from seawater.



apexFAST with injection loop replaced with preconcentration micro-column.