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SC-FAST: Fully automated low pressure system for performing trace elemental speciation by ICP-MS

Dan Wiederin, Paul Watson and Patrick Sullivan

Elemental Scientific, Inc., 2440 Cuming St., Omaha NE 68131, U.S.A.

The ESI SC-FAST rapid sample analysis system utilizes a 6 port injection valve to reduce sample uptake and wash-out times in standard ICPOES and ICPMS analyses. With the addition of a low pressure column, a simple but effective means of performing fully automated separation of elemental species of both Chromium and Arsenic is possible.

The Chromium species are separated using a low pressure ion exchange column, the Cr(VI) species passes straight through the column while the Cr(III) species undertakes selective adsorption/desorption on the column.

The Arsenic species separation is also performed using a low pressure ion exchange column, but by step gradient elution of the different As species. The loading of the different eluents onto the column is controlled fully by the SC-FAST software.

A peristaltic pump is utilized to pass the samples/eluents through the column, providing a low cost solution to speciation analysis.

Separation, calibration and recovery data will be shown for Cr(III) & Cr(VI) in various waters, along with As(III), As(V), AsBet & MMA data in both waters and biological fluids.