

Introducing the New Agilent 7700 Series ICP-MS; Improved Performance for Speciated Analysis.

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Agilent ICP-MS systems are widely used for elemental detection in both research and routine speciation analysis, with many examples of applications combined with HPLC, GC and CE. In addition to the commonly-reported applications (such as organo-tin speciation in marine sediments, marine fauna and consumer products, arsenic speciation in food and drinking water, and chromium speciation in environmental samples and building materials), ICP-MS has also proved useful for the measurement of more unusual analytes, notably sulphur, phosphorus and the halogens. Applications include clinical, nutritional, pharmaceutical and environmental monitoring, and the improvement in the capability of ICP-MS to measure these difficult elements has been a key development goal at Agilent.

The completely redesigned, 3rd Generation Octopole Reaction System (ORS³) of the 7700 delivers vastly improved removal of interferences in helium (He) collision mode. This improved interference removal allows many previously difficult elements to be measured at significantly lower detection limits than were previously obtainable, without requiring the use of complex, single-element reaction gas conditions. In particular, the new 7700 cell provides much lower detection limits for S and Se, using the same He mode cell conditions. Significant developments to the RF generator design have also improved the tolerance of the 7700 to volatile organic solvents, allowing rapid gradient elution to be carried out with minimal disturbance of the plasma.

Software integration for speciation applications has also been improved, with fully integrated chromatographic data analysis, including advanced features such as Compound Independent Calibration, Signal to Noise calculation and real-time review during data acquisition.