

## **Multicollector ICP-MS with a desolvating nebulizer system for isotope ratio measurements**

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### **Abstract**

Multicollector ICP-MS instruments are very specialized systems for high precision isotope ratio measurements. For useful measurement of low abundant isotopes and mass-limited samples, signal enhancement is often necessary. In addition, sample preparation and/or sample aerosol desolvation may be needed to reduce or eliminate mass spectral interferences such as oxides and hydrides.

This poster will review important optimization parameters of both the multicollector ICP-MS and the desolvating nebulizer system for high and stable analyte signals (example Pb, U) with lowest backgrounds. Experimental parameters such as nebulizer gas flow rate, spray chamber and membrane oven temperatures, Ar sweep gas flow rate (outside the membrane), N<sub>2</sub> addition gas flow rate (post membrane), and ICP-MS ion optic settings for dry plasma conditions will be detailed. In addition, setup of the Ar sweep gas outlet line and trap reservoir will be described for minimization of localized condensate buildup which can cause signal instability.