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**Simultaneous measurement of sulfur and lead isotopes in sulfides using  
nanosecond laser ablation coupled with two multi-collector inductively coupled  
plasma mass spectrometers**

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**Abstract:** We herein report the coupling of a nanosecond laser ablation system with a large-scale multi-collector inductively coupled plasma mass spectrometer (Nu1700 MC-ICPMS, NP-1700) and a conventional Nu Plasma II MC-ICPMS (NP-II) for the simultaneous laser ablation and determination of in situ S and Pb isotopic compositions of sulfide minerals. We found that the required aerosol distribution between the two spectrometers depended on the Pb content of the sample. For example, for a sulfide containing 100–3000 ppm Pb, the aerosol was distributed between the NP-1700 and the NP-II spectrometers in a 1:1 ratio, while for lead contents > 3000 and < 100 ppm, these ratios were 5:1 and 1:3, respectively. In addition, S isotopic analysis showed a pronounced matrix effect, so a matrix-matched external standard was used for standard-sample bracketing correction. The NIST NBS 977 (NBS, National Bureau of Standards; NIST, National Institute of Standards & Technology) Tl (thallium) dry aerosol internal standard and the NIST SRM 610 (SRM, standard reference material) external standard were employed to obtain accurate

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