

## **<sup>34</sup>S/<sup>32</sup>S WITH CONFLOW-ELEMENTAL ANALYZER-IRMS**

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In high-temperature processes, sulfur isotope fractionation is small compared to surface processes. Thus, in order to resolve small differences in <sup>34</sup>S/<sup>32</sup>S caused by high-temperature processes, a suitable reproducible and accurate method is required.

Conflow-Elemental-Analyzer-IRMS is widely used to determine <sup>34</sup>S/<sup>32</sup>S of different types of materials. In principle, the analytical precision of this method can be better than 0.1 ‰ (1 SD), the limits of precision are given by the relatively high uncertainties of the IAEA reference materials (0.2 ‰ to 0.4 ‰, 1SD).

To address this issue, we are in the process of producing a new and homogeneous sulfate standard with δ<sup>34</sup>S of 0 ‰ to obtain a well-defined reference point on the V-CDT scale. For inter-lab comparison, we plan to cross-calibrate the IAEA reference materials and our in-house standards and will compare two batches of IAEA reference materials to test for homogeneity. To obtain a consistent dataset, we have developed a standard protocol for off-line <sup>34</sup>S/<sup>32</sup>S data reduction and for transfer of raw delta values to the V-CDT scale.