Elements
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Boron: Light and Lively

EDWARD S. GREW, Guest Editor

From Cosmic Scarcity to 300 Minerals

Evolution of Early Solar System

Cycling in Subduction Zones

Records of Paleoclimate

Economic Sources and Uses

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Origin of RNA and Precursors to Life

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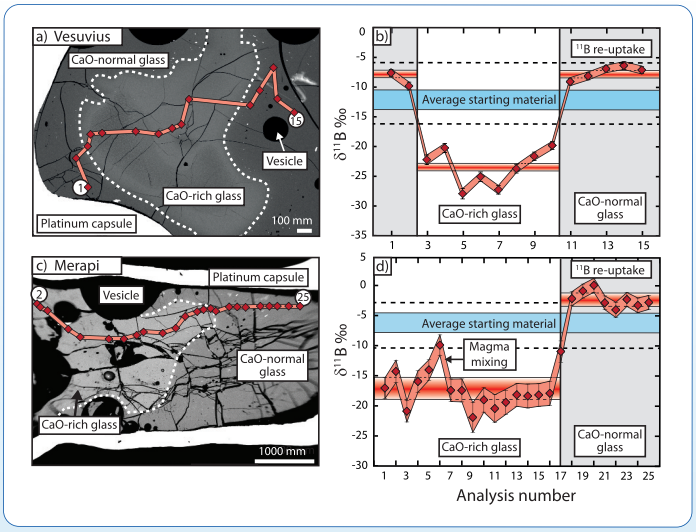

Back scattered electron images with red symbols indicating SIMS analysis spots (a,c), and corresponding $\delta^{11}B$ SIMS profiles (b,d).
Data from : F. M. Deegan et al, Scientific Reports 6, 30774 (2016).

With the **IMS 1300-HR³**, CAMECA greatly improves the performance of its large geometry SIMS (LG-SIMS), already a market leader, and offers the geoscience community a unique combination of **H**igh **R**eproducibility at **H**igh spatial **R**esolution and **H**igh mass **R**esolution.

Carbon is transferred from the Earth's interior to the surface mainly by CO_2 degassing at arc volcanoes. In this study, boron is used as a tracer, which substitutes for carbon in limestone, to further investigate crustal carbonate degassing in volcanic arcs.

LG-SIMS boron in-situ isotope measurements revealed that CaO-rich glasses have extremely low $\delta^{11}B$ values, demonstrating the efficacy of boron isotope fractionation during crustal carbonate assimilation.

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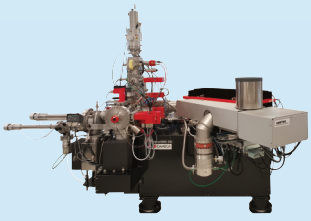
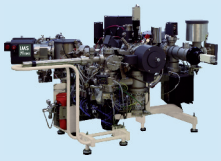


NanoSIMS 50L
SIMS for submicron scale analysis



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