[JJ] Evening Poster | S (Solid Earth Sciences) | S-CG Complex & General

# [S-CG61]Ocean Floor Geoscience

convener:Kyoko Okino(Atmosphere and Ocean Research Institute, The University of Tokyo)
Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)
Most of Earth's volcanism and much of its tectonic activity occur on and beneath the seafloor. Various phenomena on the seafloor are closely linked to plate tectonics, Earth structure and dynamics, and also related to Earth's environments through the hydrosphere and atmosphere. Seafloor rocks and sediments record Earth's evolution and heat and material fluxes on the Earth. Ocean Floor Geoscience session covers a broad range of research on seafloor such as mid-ocean ridge process, subduction dynamics, arc magmatism, hot spot and LIPs, crustal movement and structure etc. Every field of researches and every approaches are welcomed. The session aims to encourage discussion among scientists from different study fields and to integrate our understanding of ocean floor. The session is co-dhaired by K. Tadokoro (Nagoya Univ.), O. Ishizuka (AIST), T. Toki (Univ. Ryukyu), and N. Takahashi (JAMSTEC).

# [SCG61-P16]A simple determination of major- and trace-element composition for peridotite by ICP-MS: an application of acid-digested fused-glass bead

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Keywords:whole-rock composition, ICP-MS, XRF, lithium tetraborate glass

A simple analytical procedure for determination of whole-rock major- and trace-element composition by inductively coupled plasma-mass spectrometer (ICP-MS) using fused-glass bead (sample + lithium tetraborate) is presented. In the case of peridotite, chromite is one of the minerals resistant to acids and interferes with accurate and reproducible determination of whole-rock composition. Such resistant minerals were not observed in the fused-glass beads prepared here, suggesting complete digestion of the samples including chromites. The fused-glass beads were properly dissolved into a nitric acid solution to analyze with sector magnetic field ICP-MS (ICP-SFMS) and Q-pole mass filter ICP-MS (ICP-QMS). The analytical procedure was optimized and evaluated with five geological reference materials, BIR-1, JB-3, JGb-1, JP-1, and W-2. The results demonstrate that the whole-rock compositions were reasonably quantified with the analyses of ICP-MSs.

Since only fused-glass beads are required as an analytical target to determine whole-rock major- and trace-element composition, the sample amount consumed through the series of analytical procedure can be constrained to a minute amount (e.g. <0.4 g). The analytical procedures with ICP-MSs are considered appropriate for tiny and/or precious samples, such as xenoliths and samples collected by dredging, diving, and drilling from the world’s ocean basins.