Japan Geoscience Union Meeting 2011
(May 22-27 2011 at Makuhari, Chiba, Japan)

SMP005-P01 会場:コンベンションホール 時間:5 月 23 日 10:30-13:00

西南日本金剛山地に分布する葛城トーナル岩の希土類元素組成
REE composition of the Katsuragi tonalite, Kongo Mountains, southwestern Japan

竹村 建人 [1*], 壷井 基裕 [2]
Kento Takemura[1*], Motohiro Tsuboi[2]

[1] 関西学院大学大学院理工学研究科, [2] 関西学院大学理工学部化学科
[1]Sci. Tech., Kwansei Gakuin Univ., [2]Sci. Tech., Kwansei Gakuin Univ.

Adakitic rocks are important for understanding the crust-forming processes on the earth. Adakitic rocks are characterized by Sr-rich and Y-poor chemical composition. Petrogenesis of adakitic rocks are commonly explained by slab melting of the subducted oceanic crust or fractional crystallization of a basaltic magma under high pressure conditions.

Some of the adakitic rocks including the Katsuragi tonalite have been reported in southwestern Japan (Nishioka, 2008). The Katsuragi tonalite, however, have not been systematically analyzed for rare earth element (REE). In the study, we report whole-rock major, trace and REE compositions of the Katsuragi tonalite, and discuss the petrogenesis of the pluton. The Katsuragi tonalite is situated around Mt. Kongo and Mt. Katsuragi in Kongo Mountains, southern part of Osaka prefecture, southwestern Japan, and consists of a 10 km (north-south) x 15 km (east-west) body. The pluton is divided into three rock types with different lithology: type I, II and III (Masaoka, 1982). Type I is weakly schistosed medium-grained granodiorite to quartz diorite. It is distributed in the southern half and marginal part of the pluton. Type II is weakly schistosed to massive coarse-grained granodiorite distributed in the eastern part of the Mt. Katsuragi. Type III is massive to weakly schistosed medium-grained granodiorite distributed in the western part of the Mt. Katsuragi (Masaoka, 1982). A total of 15 samples of Katsuragi tonalite were analyzed for chemical composition. The major-trace element compositions and REE compositions were obtained by XRF and ICP-MS, respectively. The chemical compositions of the Katsuragi tonalite are SiO_2 = 62.0-68.7 wt.%, Sr = 420-611 ppm, Y = 6.8-12.3 ppm, Sr/Y ratios = 44-72. All samples of the Katsuragi tonalite were plotted within the field of adakite on a graph of Sr/Y vs. Y (Defant et al., 1991). Each types of the Katsuragi tonalite shows different trend on the Harker's diagram. REE compositions normalized by CI-chondrite show high-LREE, low-HREE pattern. Type I and some samples of type III show no Eu anomaly, however, type II and the other samples of type III show the positive Eu anomaly. Magma genesis of type II and III might be concerned with feldspar crystallization.

References

Nishioka, Y., 2008, *Abstracts of 115th Annual Meeting, Geol. Soc. Japan*, 131.
Masaoka, K., 1982, *Jour. Geol. Soc. Japan*, **8**, 83-497.
Defant, M.J. et al., 1991, *J. Petrol.*, **32**, 1101-1142.

キーワード: アダカイト, 希土類元素, 葛城トーナル岩, 花崗岩
Keywords: adakite, rare earth elements (REE), Katsuragi tonalite, granite