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# REE-bearing Minerals in Granitoids at Sibolga and Panyabungan, North Sumatra, Indonesia

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IWAN, Setiawan[1*] ; TAKEYUKI, Ogata[2] ; TAKAHASHI, Ryohei[2] ; IMAI, Akira[2]
IWAN, Setiawan[1*] ; TAKEYUKI, Ogata[2] ; TAKAHASHI, Ryohei[2] ; IMAI, Akira[2]

[1]Graduate School of Engineering and Resource Science, Akita University, Japan, [2]Department of Earth Resource Science, Faculty of International Resource Sciences, Akita University,
[1]Graduate School of Engineering and Resource Science, Akita University, Japan, [2]Department of Earth Resource Science, Faculty of International Resource Sciences, Akita University,

Granitoids in the western part of North Sumatra are being studied to elucidate the genesis of REE mineralization on the basis of mineralogical and geochemical methods. Eleven samples were analyzed by petrography, XRF, SEM and ICP-MS to identify REE-bearing minerals and determine REE concentration.

The granitoids at Sibolga and Panyabungan are separated by 166 km distance, which formed in different settings, but both of the two magmas share ilmenite-series and metaluminous affinity. Petrographic study revealed that granitoids in Sibolga are A-type and ilmenite-series alkali feldspar granite and quartz syenite, formed within plate setting, and that I-type and ilmenite-series quartz syenite in Panyabungan was formed in volcanic arc setting. Allanite, apatite and titanite in the granitic rocks at Sibolga and Panyabungan contain Y, Ce, La, Pr, Nd, and Yb.

The setting changed due to change in tectonics during Late Permian to Cretaceous, from continental rift to magmatic arc setting. The enrichment of REE in the Sibolga and Panyabungan granitoids was caused by crystallization of allanite, apatite, and titanite.

キーワード: Sibolga, Panyabungan, Granitoids, A-type, I-type, ilmenite-series
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