

## Process of formation rhyolite from Nagahama volcano lava flow, Koze-shima, Tokyo, Japan

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Koze-shima of Izu Islands is located on Izu-Mariana islands arc. Koze-shima, together with Ni-jima and Shikine-jima located in the northeast, consists of rhyolitic monogenetic volcanoes which spouted out on Zenisu ridge, and is contrastive with that O-shima, Miyake-jima and Hachijo-jima located in a short distance are basaltic stratovolcanos. Koze-shima consists of lava domes and the thick lava flow, and thick pyroclastic deposits accumulate over them.

Nagahama volcano which is one of the rhyolitic monogenetic volcanos located in the northwest of the island was formed in the oldest stage of the rhyolitic volcano activities of the island. This study aimed at clarifying the formation process of the lava by description of the samples from Nagahama volcano lava and the physical and chemical properties of the rock.

The rhyolite from the northern part of Nagahama volcano lava flow is described. Crystallites, microlites, spherulites and microspherules are observed in glassy groundmass, and glass inclusions are observed in phenocrysts. Chemical compositions of phenocrysts, glass inclusions, glassy groundmass and minute minerals in glassy groundmass were analyzed by EPMA. By the heating experiment, homogenization of inclusion and foaming phenomenon of glassy groundmass were observed.

Formation process of the Nagahama volcano lava flow was investigated by the observation and the knowledge about minute minerals and inclusions. Phenocrysts crystallized in magma before the spout of magma, and glass inclusions were formed in the process of the crystal growth of phenocrysts. Microlites, crystallites, microspherules, and glass were formed by rapid cooling at the time of the spout of magma, and different properties of these were caused by the difference of cooling velocity. Spherulites were formed by devitrification after magma was cooled. This suggests that there was hydrothermal activity causing devitrification after cooling of magma. In addition, it is thought that the foaming of glassy groundmass occurred at the time of the spout of magma, and formed the porous rock.