

## A study of felsic rocks from Shionomisaki igneous complex, Kii Peninsula, Southwest Japan

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### 1) Introduction

The Shionomisaki Igneous Complex is located in Shionomisaki and Oshima area, Kii Peninsula, Southwest Japan. The volcanic and plutonic bodies comprise both mafic and felsic rocks. The Shionomisaki Igneous Complex is a Miocene volcano-plutonic complex (Miyake, 1981). The Shionomisaki Igneous Complex was formed in Structural High Magmatic Zone which is in an upheaval zone of Southwest Japan (Miyake, 1983). The felsic rocks are rhyolite, quartz porphyry, and granophyre. This time, I report on geological and petrological characteristics of the felsic rocks.

### 2) Geology

The Granophyre intrusive body (diameter 1km) occurs in the southern part of Shionomisaki area. The Granophyre veins, dykes intrude into country rocks. The quartz porphyry intrusive body (diameter 2km) occurs in the western part of Shionomisaki area. The rhyolite masses occur in Oshima area.

### 3) Petrography

The rhyolite is porphyritic with phenocrysts of plagioclase, opx and quartz. Groundmass consists of plagioclase, opx, quartz and K-feldspar. The quartz porphyry is porphyritic with phenocrysts of plagioclase and quartz. Groundmass consists of plagioclase, quartz and K-feldspar. The Granophyre is equigranular and micrographic, consisting of plagioclase, quartz and K-feldspar.

### 4) Characteristics of K<sub>2</sub>O content of felsic rocks

The felsic rocks are divided into lower K<sub>2</sub>O (under 2wt%) felsic rocks and higher K<sub>2</sub>O (3.5-4.5wt%) felsic rocks.

The lower K<sub>2</sub>O felsic rocks (Low-K felsic rocks) have the wider range of SiO<sub>2</sub> content (71-81wt%). The Low-K felsic rocks contain no K-feldspar. Chemical composition of the plagioclase (phenocryst or idomorphic) is An<sub>50-20</sub>, that of the plagioclase (groundmass or xenomorphic) is An<sub>20-5</sub>.

The higher K<sub>2</sub>O felsic rocks (High-K felsic rocks) have the narrower range of SiO<sub>2</sub> content (70-74wt%). The High-K felsic rocks contain K-feldspar. Chemical composition of the plagioclase (phenocryst or idomorphic) is An<sub>60-40</sub>, that of the plagioclase (groundmass or xenomorphic) is An<sub>20-10</sub>.

The higher K<sub>2</sub>O rhyolite, higher K<sub>2</sub>O quartz porphyry and higher K<sub>2</sub>O granophyre have unique characteristics of Rb/K<sub>2</sub>O, Ba/K<sub>2</sub>O, Pb/K<sub>2</sub>O.

### 5) Relationship between Low-K rocks and High-K felsic rocks, and geological characteristics

Low-K felsic rock occurs in the outer part of the felsic intrusive body. High-K felsic rock occurs in the center of the felsic intrusive body.