Oral | Symbol S (Solid Earth Sciences) | S-CG Complex & General

[S-CG61_2AM2]Petrology, Mineralogy and Resource Geology

Convener:*Toshiaki Tsunogae(Faculty of Life and Environmental Sciences (Earth Evolution Sciences), University of Tsukuba), Koichiro Fujinaga(Department of Systems Innovation, School of Engineering, University of Tokyo), Akira Miyake(Department of Geology and Mineralogy, Graduate School of Science, Kyoto University), Nobutaka Tsuchiya(Department of Geology, Faculty of Education, Iwate University), Chair:Koichiro Fujinaga(Department of Systems Innovation, School of Engineering, University of Tokyo), Akira Miyake(Department of Geology and Mineralogy, Graduate School of Science, Kyoto University)
Fri. May 2, 2014 11:00 AM - 12:45 PM 311 (3F)

We widely invite presentations in the fields of petrology, mineralogy and resource geology. Especially description of minerals and rocks, investigation of their origin and evolution by field investigation and/or laboratory experiments, and development of new methods are accepted.

12:15 PM - 12:30 PM

[SCG61-P16_PG]SEM-EDS Automated Particle Analysis of Mineral Compositions of Rocks

3-min talk in an oral session

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Rocks consist of various kinds of minerals depending on their localities and formation processes. Mineral compositions of rocks are very important to study their sources and formation processes. X-ray fluorescence analysis (XRF) is commonly needed for mineral composition analysis. The XRF analysis provides the average composition of elements in a rock. Analysis of mineral particles in a rock is sometimes more important to find features of a rock. However, the analysis of a large number of mineral particles in a rock one by one requires a great deal of time. In recent years, the automated particle analysis combined with a scanning electron microscope (SEM) on energy dispersive X-ray spectrometer (EDS), which is called SEM-EDS automated particle analysis has rapidly been advancing. This method enables fast analysis of a large number of particles one by one directly.In this report, analysis of the mineral compositions of two rocks -the Koujaku granite and the Hakkoda second-stage pyroclastic flow deposition (Ht2) - was carried out with SEM (JSM-IT300LA, JEOL)-EDS (JED2300, JEOL) automated particle analysis. The samples for this analysis were prepared as follows: rocks were crushed separately and each crushed rock embedded in resin was polished. More than a few thousand particles of the rocks were analyzed. In the Koujaku granite, quartz was a dominant constituent. K-feldspar and alkali feldspar were contained in a higher concentration than plagioclase. In addition, some colored minerals were contained. In the Ht2, pumice was a dominant constituent. In addition, quartz, feldspar and some colored minerals were contained. Additionally, many particles in the Ht2 consisted of multiple minerals unlike in the Koujaku granite. In the presentation, we will give more detailed descriptions of minerals and their components of the rocks.