[EJ] Evening Poster | S (Solid Earth Sciences) | S-MP Mineralogy & Petrology

[S-MP37]Deformed rocks, Metamorphic rocks and Tectonics

convener:Yoshihiro Nakamura(Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology), Yumiko Harigane(Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology (AIST))

Mon. May 21, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

We invite all researchers who aim to understand the dynamics of the earth's crust and mantle at the plate boundaries, to discuss the latest results from various viewpoints. The scope will include contributions through petrology and structural geology as well as various techniques including rheology and transformation of heat and mass.

[SMP37-P04]Revisiting of the high-pressure type Suo metamorphic rocks from the southern part of Shunan City, Yamaguchi Prefecture

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Keywords:metamorphic rock, Suo metamorphic belt, Ryoke metamorphic belt

The Suo metamorphic rocks use to be considered as widely existence on the southern part of Shunan City, Yamaguchi Prefecture. Mineral assemblages of the high-P type Suo metamorphic rocks are locally similar to those of low-P type Ryoke metamorphic rocks due to affected by contact metamorphism because the Cretaceous granitoids widely intrude into this area. Metamorphic rocks serve as a record for the formation of protolith and metamorphic and deformation processes. To grasp the properties of metamorphic rocks in this area, we examined geological field work, petrography, analyses of deformation features and mineral /bulk chemical study. These descriptions can contribute to the analysis of tectonics of the Japanese island prior to opening of Japan sea.

Metamorphic rocks occurring in the Oshima Peninsula and Otsushima Island consist mainly of pelitic rock, pebbly mudstone, bedded chert, sand stone and siliceous mudstone with a small amount of metagabbro that intrudes other metasediments. The Cretaceous andesite and dacite lavas unconformably overlay the metamorphic rocks. The foliations show E-W trending with N or S gentle to steep dipping. Composite planar fabrics corresponding to the Ss1 plane often develop in the pelitic schists. Results of structural analysis reveal that the deformation sense shows Top to the West and Top to the North.

The pelitic schist and pebbly pelitic schist show a lepidoblastic texture defined by the arrangement of biotite and muscovite. Mineral assemblages of these schists progressively change from Ms-Bt in the north to Bt-Ms-Crd in the south of study area. Cordierite is crystallized along to the schistosity. In addition, And with pressure shadow is locally included in the pelitic schists from the southern part where Grt occurs in the pelitic schists. The pelitic schists existing within 50 m widths from the granodiorite stock little show the lepidoblastic texture and bear decathite biotite. The mineral assemblages of Top to the West shear plane possess similar to those of the schistsity. On the other hand, there is no mineral array on the Top to the North shear plane.

Chemical composition of the metagabbro shows the tholeiitic series and is plotted in the field of the island arc tholeiite and/or MORB.

Metamorphic conditions show 550 to 600 degree and 180 to 300MPa using Grt-Bt geothermometer and Grt-Pl-Bt-Qz geobarometer.

Metamorphic rocks from the southern part of Shuan City are characterized by existence of the bedded chart as a protholith lithologically similar to the Kuga group. Mineral assemblages of the pelitic rocks in this region resemble those of the same protoliths from Bt zone to Kfs-Crd zone of the low-P type Ryoke metamorphic belt. Considering the mineral assemblages of Ss1 planes, the deformation of Top to the West occurs during the peak metamorphism, whereas and the deformation of Top to the North probably causes after the peak metamorphism.