Japan Geoscience Union Meeting 2011
(May 22-27 2011 at Makuhari, Chiba, Japan)

SCG008-P08 会場:コンベンションホール 時間:5 月 26 日 14:00-16:30

A Preliminary View of Metamorphic Rocks in Indonesia Region
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Indonesian archipelago formed by reassembly of fragment rifted from Gondwana that arrived at the Eurasian subduction margin. A Cretaceous active margin is interpreted along Sumatra into western Java continued through southeastern Kalimantan into western Sulawesi, as suggested by the distribution of high pressure-low temperature subduction-related metamorphic rocks. Present-day, geology of Indonesia is the result of Cenozoic subduction and collision and situated at the boundaries of Eurasia, Indo-Australia, and Pacific-Philippine Sea plate.

Previous study by Hall (2002) suggests that in western Sumatra, Paleozoic sediments and volcanic rocks interpreted part of Indochina-East Malaya block that separated from Gondwana. In eastern Sumatra, there are Carboniferous sediments belong to Sibumasu block separated from Gondwana. Permian and Triassic granites of Thai-Malay tin belt extend into western Indonesia are the products of subduction and post-collisional magmatism in Triassic. In the southwestern Kalimantan, the Paleozoic age is represented by Carboniferous to Permian metamorphic rocks. Cretaceous granitoid plutons intrude the metamorphic rocks in Schwaner Mountains. Northwestern Kalimantan may mark as a subduction margin continuing south from East Asia.

On the east side of Indonesia, geology of Sulawesi caused by convergence between Australian, Pacific, and Eurasia plate. In eastern Sulawesi, collision resulted in thrusting of Australian continental rocks. The Banda Arc including Timor-Tanimbar-Seram islands, situated between Indo-Australian, Eurasian and Caroline plate. From the inner to outer side of the following belts, have been distinguished: ophiolite, metamorphic, and thrust-fold belt. The geology of Papua is involving interaction between Australian and Pacific plate. Lithotectonic of Papua can be divided from north to south are collided arc, ophiolite and metamorphic belt, fold-thrust belt, and foreland basin.

Purpose of this study is to understanding in detail Indonesian tectonic regime from the study of metamorphic rocks. In this preliminary view, 16 samples taken by GRDC (Geological Research and Development Centre) Indonesia have been observed petrographically and five samples from those have been analyzed by EPMA.

Seven samples from West Papua including Kaimana, Ransiki, Maar and Enarotali area are slate with the composition of quartz, muscovite, and chlorite. On the Steenkool area are biotite gneiss and white schist suggest greenschist to amphibolite facies. Biotite gneiss has composition of biotite, quartz, muscovite, plagioclase and k-feldspar. White schist has composition of quartz, muscovite and chlorite. Four samples from Kendari - southeast Sulawesi are mica schist with composition of quartz, muscovite, chloritoid and chlorite suggest greenschist facies. One sample amphibolite from Central Java shows composition of hornblende (XMg 0.62-0.70), garnet (almandine), sphene, epidote, quartz and minor minerals of plagioclase and k-feldspar.

Four samples from Schwaner Mountains, West Kalimantan, have been observed in petrography and EPMA analyses. The samples can be divided into three groups by name, which are metatonalite, metagranitoid and biotite schist. Mineral assemblages for metatonalite are quartz, plagioclase (An36-50), k-feldspar, hornblende (XMg 0.53-0.64), biotite, sphene, apatite and clinopyroxene. While on metagranitoid is shows assemblages of quartz, plagioclase (An22-23), k-feldspar, biotite, sphene, epidote and apatite. Biotite schist mineral assemblages show quartz, plagioclase (An83-85), k-feldspar, biotite, epidote and muscovite.

Detailed field observation and new collecting samples with EPMA, bulk chemistry analyses and age dating determinations are needed to understanding in details geological evidence constrain from metamorphic petrology on the Indonesian region. These steps will be held during March 2011 on the South Sulawesi and Central Java and the result will be presented on the conference.
Keywords: metamorphic rock, Indonesia, tectonic, South Sulawesi, Central Java, Schwaner Mountains