

Geochronology of calc-silicate and related rocks in the Mogok Metamorphic Belt, Myanmar

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Myanmar is situated in the collision zone between the Indian subcontinent and Eurasian continent, resulted in the development of Cenozoic metamorphism and related magmatism in Myanmar. The Mogok Metamorphic Belt is elongated, a north–south aligned belt of high-grade metamorphic rocks and granites extends for about 1500 km in the length, which stays along the western margin of Shan–Thai block, from the Andaman Sea in the south to the Eastern Himalayan Syntaxis in the north. The belt is quite famous as worldwide gem deposit including ruby, spinel, sapphire and other precious or semiprecious stones. These gem quality ruby and sapphire are commonly present in the marble and calc-silicate rocks. The metamorphic rocks in the Mogok Metamorphic Belt have been considered regionally metamorphosed during Late Cretaceous to Miocene.

Petrological and geochronological investigations carried out for the central Mogok Metamorphic Belt, from north to south, *Mogok–Momeik–Thabeikkyin area*, *Madaya–Mandalay–Kyaukse area*, *Thazi–Tatkon (Naypyitaw) area* and *Kyaikto area*. The Mogok Metamorphic Belt minerals show amphibolite-facies metamorphism based on their mineral assemblages in the rock types of pelitic gneiss, marble, calc-silicate rocks, schist and amphibolite. Zircon grains from the garnet–biotite–cordierite gneiss, clinopyroxene marble and clinopyroxene calc-silicate rocks from Mogok–Momeik–Thabeikkyin–Madaya area have been analyzed to obtain metamorphic ages by using LA–ICP–MS. The U–Pb dating on the rim of zircon revealed in these rocks type, the metamorphic age of ca. 30–21 Ma from Mogok–Momeik–Thabeikkyin area and the inherited ages ca. 43 Ma to 30 Ma from Mandalay–Madaya area. This study constrains the timing of metamorphic age is ca. 30–21 Ma (Oligocene to Late Miocene) in Mogok Metamorphic Belt, is also related to the collision of India–Eurasian continents.

Keywords: India–Eurasian continents collision, Mogok Metamorphic Belt, amphibolite-facies, metamorphic age Oligocene to Late Miocene

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