

**Title :** Petrography and Provenance of Carboniferous Sandstone at Ban Mae Jo, Ban Pao Subdistrict, Mae Tang District, Chiang Mai Province

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## ABSTRACT

Carboniferous red-bed sandstone is widely distributed in Ban Maejo, Ban Pao Subdistrict, Mae Taeng District, Chiang Mai Province. This study aims to investigate petrography and stratigraphy for interpreting the provenance of sandstone sediments by analyzing of the petrographic characteristics and mineral compositions under a polarizing microscope. The sandstones in this area can be classified into 3 types: lithic arenite, sublith arenite, and lithic wacke, according to the classification of Pettijohn (1987). The sandstone samples are mainly composed of fine- to coarse-grained, subangular to subrounded roundness, high sphericity, and poorly sorted. The mineral compositions mainly consist of monocrystalline quartz, polycrystalline quartz, and lithic fragments with a minor amount of feldspars. The lithic fragments mainly composed chert, sandstone, silicified rocks, shale, and mudstone. The feldspars are rare, including orthoclase and plagioclase. Other mineral components include zircon and tourmaline. The matrix is quartz and lithic fragments with an iron oxide cement. From the petrographic study, the lithic sandstones fall in the 'Recycled orogenic' on the Q-F-L diagram and 'Quartzose recycled' field on the Qm-F-Lt diagram according to the classification of Dickinson et al. (1983) and Dickinson and Suczek (1979), respectively. Based on the provenance interpretation, the sediment sources of the studied sandstones were derived from the quartzose rocks, which was uplifted and eroded from by multicycle origin.

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