

## PRELIMINARY STUDY: TECTONIC SETTING OF GRANITOIDS FROM THE SUKHOTHAI TERRANE UTTARADIT PROVINCE, THAILAND

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Within the Uttaradit Province, northern Thailand the Nan Suture occurs between the Indochina and Sukhothai terranes, extending for approximately 150 km in a northeastern-southwestern direction. The rocks associated with the Nan Suture are generally dominated by ophiolitic rocks such as gabbro, pyroxenite, and serpentinised peridotite (PANJASAWATWONG, 1991).

However, this work focuses on the nearby granitoids which are widely exposed in the Uttaradit Province. In general three granitic provinces occur within Thailand, which are designated as western-, central and - eastern- granitoid belts. Granitic plutons in the study area belong to the eastern granitoid belt displaying usually I-type affinity (COBBING, 2011). Outcrops are readily found along both sides of the Nan River. Granitoids occurring along the western side of the Nan river are overlain by silicic clastic sedimentary rocks. In contrast, the eastern side is in contact with limestone and pyroclastic rocks. Part of the limestone was transformed during contact metamorphism to calc-silicate rocks with a mineral assemblage of quartz, clinopyroxene, wollastonite, and plagioclase.

First petrographical observations did not show significant differences in mineral assemblage and texture between the granitoid occurrences from the study area. They typically show a seriate texture, perthitic feldspars and small amounts of micrographic texture. The micrographic quartz-feldspar intergrowth texture is mostly found in the eastern parts. The main mineral assemblage comprises quartz, plagioclase, and some alkali feldspars. Their accessory mineral content includes biotite, apatite, zircon, and hornblende. According to their mineral assemblages the igneous rocks are classified as monzogranite, granodiorite and tonalite. Previous work on a granitic pluton nearby covering a surface area of ~1 km<sup>2</sup> gave an emplacement age of is  $254.7 \pm 4.2$  Ma. The Permo-Triassic granites most likely formed within a syn-collisional or post-collisional environment. Further age dating as well as geochemical data are planned and will help to better understand the emplacement of these granitoids during the accretion of the Sukhothai terrane.

COBBING, E.J. (2011): In RIDD, M., BARBER, A., CROW, M. (eds): The Geology of Thailand, 441-457, Geological Society, London.

PANJASAWATWONG, Y. (1991): Petrology, geochemistry and tectonic implications of igneous rocks in the Nan Suture, Thailand, and an empirical study of the effects of Ca/Na, Al/Si and H<sub>2</sub>O on plagioclase-melt equilibria at 5-10 kb pressure. Unpublished Ph.D. thesis, University of Tasmania, Tasmania.