Mineral composition of serpentinized ultramafic rocks in Ba Vi area, North Viet Nam: a preliminary results

WOJCIECH SMOLIŃSKI[1], LUCYNA NATKANIEC-NOWAK[1], GIANG NGUYEN KHAC[2], PIOTR GUNIA[3], WIESŁAW HEFILK[2]

[1] Faculty of Geology, Geophysics and Environmental Protection, AGH-University of Science and Technology, Krakow 30-059, 30 Mickiewicz Av., Poland, smolinski@agh.edu.pl
[2] Faculty of Geosciences and Geoengineering, Hanoi University of Mining and Geology, 18 Duc Thang Ward, North Tu Liem Dist, Ha Noi, Vietnam
[3] Faculty of Earth Sciences and Environmental Management, University of Wroclaw, Wroclaw 50-204, 9 Max Born Sq.

The Triassic serpentinized mafic-ultramafic rocks from Ba Vi Complex, situated ca. 50 km on west from Hanoi (North Vietnam), was subject of the preliminary mineralogical and petrological studies. Non-vietnamese literature describing this area is very poor.

Usually, these rocks appears in the form of small separated bodies in surrounding Triassic basalts and older metamorphosed Permian sediment [1]. Some of them are strictly combined with disjunctive tectonic (faults). Sometimes the "brecciated" sharp-edged fragments of totally serpentinized ultrabasites surrounded by areas composed of small needle-shaped intergrowths of amphiboles from ctinolite-tremolite subgroup are also visible. The microscopic observations of this rocks shows that the main components, i.e., serpentine minerals, occur in three forms: (1) small needle-like antigorite filling the whole rock background and flattened, (2) cell-shaped lizardite and (3) thick veins of platy chrysotile. Usually, can be spotted small sharp-edged and fragmented primary olivine and pyroxene relics. There are highly enriched in ore/opaque minerals such as magnetite, pyrite, pentlandite and pyrrhotite. Inside of secondary minerals, the most common are clearly idiomorphic crystals of amphiboles (probably actinolite), Mg-chlorites, both poor in iron (pennine-clinochlore) and highly ferritic (sheridanite) and also carbonates. Analyzed rocks are heavily cracked and crossed by veins. In cracks occurs mainly ore minerals and the fillings of the veins are the younger generations of serpentines. Summing up, studied rocks are serpentinites whose protolith were ultramafic igneous rocks of the peridotite type.

[1] Tong-Dzuy Tang et al. (2011) VNUP, Hanoi