

Abstract

This master's thesis is focused on genetic relationships between Au-bearing ores and associated granodiorite porphyry dykes in Petrov and Bohuliby area in southwestern part of the Jílové ore district. Subvolcanic rocks with hydrothermally induced alteration and Au-bearing mineralization were characterized by petrography, mineralogy and crystallochemistry. Mutual genetic and textural relationships of studied materials were examined as well and were validated by biotite, arsenopyrite and chlorite empirical geothermometry.

First identified generation of sulfide mineralization was formed at 360°C and consist of arsenopyrite, galenite and native gold. At circa 274°C porphyry mineral association was chloritized, and chlorite gangue crystallized. Second generation of sulfide mineralization precipitated at 264°C.

Anomalous absence of Bi-Te-S phases and scheelite in hydrothermal paragenesis is important indicator of contrasting conditions of mineralization at the studied areas and main zone of the Jílové ore deposit.

Based on acquired data, granodiorite porphyry dikes were categorized to two separate genetic types, which have mutual origin in deep magma chamber of Central Bohemian Plutonic Complex but intruded non-contemporaneously.