

Rare element bearing skarns in the district of Oelsnitz-Schönbrunn, Vogtland Synclinorium, Germany

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The Erzgebirge/Krušné hory-Vogtland metallogenic province (D/CZ) represents a part of the European Variscan orogenic belt and hosts numerous polymetallic skarn ore occurrences [1]. The current research project WISTAMERZ involves the study of Sn-polymetallic skarns in the district of Oelsnitz-Schönbrunn in the southwestern part of Saxony. The skarn ores proved to host different mineralizations of rare elements (Sn, W, In) and therefore attract genetic significance [1, 2].

Of particular interest is a skarn outcrop in an old mining area which has not been described yet. Skarn ore samples from this locality exhibit significant metal concentrations (Zn: 0.2-10 wt.%; Sn: 300-5000 ppm; W: 100-1000 ppm; Bi: 100-300 ppm; n=50, all by pXRF; whole rock geochemical analyses by ICP-MS pending). The rock forming mineral assemblage is dominated by garnets, hedenbergitic pyroxene and epidote associated with quartz and fluorite impregnations. The garnet component is characterized by intense zoning, which is especially obvious in BSE imagery due to Z variation delineating members of the grossular-andradite series with Fe or Al domination, respectively.

The most abundant ore minerals are magnetite, Fe-poor sphalerite and scheelite. Pyrite, chalcopyrite, galena and bismuthiferous phases exist subordinately. The main Sn-bearing mineral is cassiterite forming acicular aggregates. A significant proportion of the elemental Sn content also is incorporated in silicate minerals, esp. in titanite (up to 9 wt.% Sn, by EDS). Furthermore, members of the helvine-genthelvite series as Be-carrier were encountered which are also known from other skarn occurrences in the Erzgebirge [1, 3].

The relationship to the underlying late-Variscan granite and the age relations of the different mineralization stages are the objective of ongoing studies.

[1] Baumann *et al.* (2000) *Lagerstätten des Erzgebirges*, Enke Verlag. [2] Doering *et al.* (1994) In: *Metallogeny of Collisional Orogens*, Czech Geological Survey, 103-109. [3] Schützel (1970) *Freiberger Forschungshefte* **C261**, 53-122.