

# Abstract Submission

*T6 - Applied, ore, and industrial mineralogy*

*Ore mineralogy and trace elements*

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## **Mineralogy of the B- and W-bearing magnesian skarns from Baia Roşie, Băiţa Bihor (Romania)**

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**Abstract Content:** Boron- and tungsten-bearing magnesian skarns were identified at Băiţa Bihor, in the Baia Roşie skarn body. This distal skarn is developed near the contact of igneous bodies of Upper Cretaceous age with dolostone marbles of Carnian - Norian age. It defines a typical metasomatic column, since a fairly consistent zoning was found from core to rim in the skarn bodies. Beside carbonates (calcite, dolomite and magnesite), borates (kotoite, suanite, szaibelyite, rarely ludwigite, pertsevite, and fluoborite), scarce humite-group minerals (chondrodite, norbergite) and magnetite occur in the outer skarn zones, whereas the inner zones typically contain magnesian silicates (e.g., forsterite, humites, diopside, phlogopite, talc, lizardite, chrysotile) and spinel. Scheelite was identified in both the outer and inner zone of the skarn body. The mineral represents a solid-solution toward powellite, containing up to 0.7 mol.% in the outer part of the metasomatic column, where associates with magnesian borates, and up to 10.73 mol.% powellite in the inner part of the metasomatic column, when associates with diopside, base metal ores (chalcopyrite, pyrite, galena, sphalerite, marcassite) and Bi sulphosalts. The occurrence of scheelite in the outer zones of the skarn body is apparently conditioned by the presence of F-rich parageneses (i.e., fluoborite, fluorite, F-rich humites), suggesting that the transport mechanism for tungsten was through F-bearing complex ions. Only hydrotungstite was identified as weathering product of scheelite. As both B and W are critical for the European Union, the accurate mineralogical investigation of this skarn deposit could be a must for the ore processing.

**Disclosure of Interest:** None Declared