

## **Mineral chemistry of ore minerals in the San Jose mine of the Oruro district, Bolivia**

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The San José deposit is one of the most important in the Oruro District. It is located in the Oruro town (Bolivia) and belong to the Central Andean tin belt. The San José deposit is related to an intrusive porphyry body, concurrent with the San Pablo stock, of the Morococala formation; which is hosted in a meta-sedimentary sequence of Silurian age.

The present work is focused in mineral characterization, paragenesis and in content from the minerals of the San José deposit. Electron microprobe analyses were carried out in order to determine the mineral chemistry of the ore minerals.

Ore mineralization occurs as veins and hydrothermal breccias around the San José and Itos stocks. Veins are filled with quartz and an ore mineral assemblage of cassiterite, galena, pyrite, sulfosalts, Ag and In-bearing sulfides. Preliminary microprobe analyses indicate that In values of 3 wt. % are common, especially in members of stannite group. Sphalerite has up to 12.4 wt.% Fe and 1.94 wt.% of Cd and 0.8 wt.% In. In contents inversely correlates with the Fe contents. In cassiterite In occasionally reach up to 0.99 wt.%, but the most common contents are 0.10-0.20 wt.%.

Stannite occurs in significant amounts; crystals are small, up to 25 µm, and in most cases are found filling cavities or following cleavage in hosted minerals as galena, sphalerite and pyrite. Likewise, sulfosalts as boulangerite, jamesonite, pyrargyrite, andorite, cylindrite, argentite, berndtite, ramhdorite, terrywallacite and greenockite are abundant in porosity and fractures.

Alteration is abundant, mainly kaolinitization. In this stage disseminations of small crystals, which include monazite and alunite group minerals.

As a conclusion of this study, we identified several mineral phases that have not been reported in the San Jose deposit until now. Some of these minerals, especially stannite group, show significant In contents.