

SILVER-BEARING MINERALS AT STAN TERG Pb-Zn DEPOSIT, REPUBLIC OF KOSOVO

PRŠEK, J.^{1*}, KOŁODZIEJCZYK, J.¹, QELA, H.², ASLLANI, B.² & MIKUŠ, T.³

¹ Department of Economic Geology, Faculty of Geology, Geophysics and Environmental Protection, AGH - University of Science and Technology, al. Mickiewicza 30, 30-059 Kraków, Poland

² Trepça Mines Prishtine, Republic of Kosovo

³ Geological Institute, Branch Banská Bystrica, Slovak Academy of Sciences, Ďumbierska 1, 974 01 Banská Bystrica, Slovakia

* E-mail: prsek@yahoo.com

Stan Terg Pb-Zn deposit is located in the northern part of Kosovo within Vardar zone. The studied deposit comprises two type of mineralization: skarn and hydrothermal. Ore genesis and minerals precipitation is connected with the Tertiary volcanic processes. Host rocks are marbles, schists and skarns. Mineralization filled up empty spaces within breccias as well. Gangue minerals are carbonates and quartz and the main ore minerals are sphalerite and galena (HYSENI *et al.*, 2010). Old suggestions and researches showed that silver is linked with galena, but no precious other studies had been done (FERAUD & DESCHAMPS, 2009 and literature therein).

Ag-bearing minerals were found in hydrothermal ore samples collected at 10th level of the mine. The samples were investigated by polarized microscope in reflected light and SEM-EDS analyses.

Our researches show that only a small amount of silver is bounded to galena (less than 0.4 wt%). Silver forms mainly its own minerals, like silver sulphosalts or minerals of the tetrahedrite group. In each case, silver mineralization is common within hydrothermal assemblages.

Several silver sulphosalts were distinguished: stephanite, pyrostitpnite and polybasite. Stephanite (Fig. 1) and pyrostitpnite (Fig. 2) occur as irregular crystals within massive galena or forms crystals in the galena vugs. Pyrostitpnite chemical composition is close to the

theoretical, whereas stephanite has higher antimony (2.4–2.5 *apfu*). Polybasite was identified as irregular form within chalcopyrite, together with Ag-bearing tetrahedrite and freibergite. Its chemical composition is close to the theoretical, but increased content of copper (12 at%) and reduced content of silver (39 at%) can be observed.

Minerals from tetrahedrite group are represented by Ag-bearing tetrahedrite and freibergite. Tetrahedrite forms small grains within galena or grains and veinlets together within chalcopyrite. Content of Ag vary from 0.5 to 2 at%. Content of Zn and Fe is very variable from 3–6.5 at% of Zn and 0.5–3 at% of Fe. Freibergite intergrowths with pyrostitpnite (Fig. 2), or forms single grain with heteromorphite inclusions or veinlets in chalcopyrite. Ag content is much higher than in tetrahedrite and it varies between 15 and 24 at%. Fe content is 4–5.5 at% and Zn content is up to 2 at%.

The position of silver mineralization in vugs or in veinlets shows it younger origin. The further researches in silver mineralisation are needed.

References

- FERAUD, J. & DESCHAMPS, Y. (2009): BRGM Report No RP-57204-FR, 92 p.
 HYSENI, S., DURMISHAJ, B., FETAHAJ, B., SHALA, F., BERISHA, A. & LARGE, D. (2010): Geologija, 53(1): 87–92.

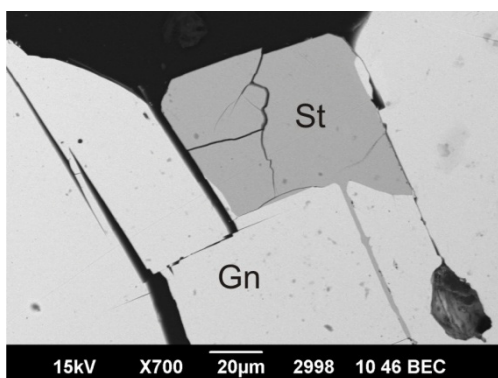


Fig. 1. Stephanite (St) crystal within galena (Gn).

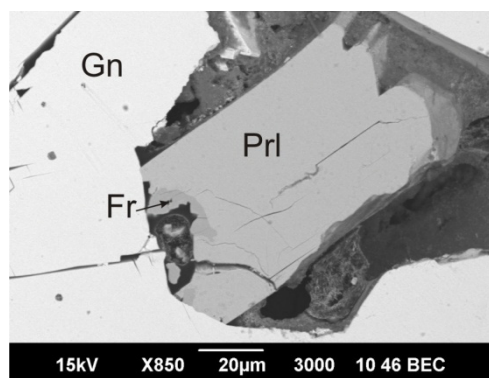


Fig. 2. Pyrostitpnite (Prl)-freibergite (Fr) grain inside vug in galena (Gn).