

Archaeometallurgy of Ancient Colchis

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Ancient Colchian civilization was famous with its developed metallurgy. This fact is proved in the mythology of Apollonius of Rhodes – Argonautica. Under the term Colchis are united tribes that inhabited modern Western Georgia and Turkey's modern Rize, Trabzon and Artvin provinces.

As it seems in XV-VI BC ancient Colchis had advanced technologies in metallurgy, this is proved with the discoveries made in XX-th century by archaeologist David Khakhutaishvili, who found hundreds of metal smelting sites on territory of Adjara and Guria.

The aim of research is investigation of slags of ancient Colchis, investigation of potential ore sources (for Colchian metallurgy), Lead Isotope analysis (of ores and slags), compare slags with ores. In provenance studies we use two analysis: chemical analysis (major and micro elements) and Lead Isotope Analysis. During studies were investigated slags from: Chaisubani, Charnali, Jikhanjuri and tsetskhlauri smelting sites.

Because ancient smelting centers are located on territory of Western Georgia, geologically was investigated nearby territories: Adjara region, Guria region and Artvin Province from Turkey. Also Madneuli deposit and deposits from Racha region.

From above mentioned regions more than 50 samples were sent to laboratory Leibniz Competence Center at German-Mining Museum. In the lab they were prepared for further analysis. They were analyzed using: PLM, SM, SEM, XRD, ICP-OES, MC-ICP-MS.

Merisi copper-polymetallic deposit is located in Adjara Mining District. Samples were taken from: Varaza, Vaio, Tskalbokela and Namonastrevi sites. Investigation of ores with X-ray diffraction revealed that they have sulphidic composition and main ore mineral is chalcopyrite in association with pyrite, galena and sphalerite.

Investigation of slags X-ray diffraction showed that main minerals are: fayalite, magnetite, cristobalite, hematite, sphalerite and quartz. Analysis also showed that slags are rich with iron oxide and they also rich with zinc, what indicated that ore source was polymetallic, this indicates that ore was from local deposits, what is also proved by lead isotope analysis.