

AP27510943 " Study of the forms of occurrence of rare earth elements (REE) and precious metals in copper-nickel and copper ores of Ulytau" Sc. S. – E.S. Li

Abstract:

The implementation of fieldwork to collect representative samples of sulfide ores from picrites, followed by the use of modern laboratory methods, including X-ray and electron microanalysis, for the study of microminerals and the determination of noble element content, will enable the identification of distribution patterns, specific manifestations, and the genesis of noble and rare earth elements (REEs).

The research results will provide a more accurate assessment of the content of noble and rare earth elements in the ores of Ulytau, which will significantly affect potential resources and strengthen the mineral resource base of the Republic of Kazakhstan.

The economic significance of this research lies in a better understanding of the genesis and characteristics of noble elements, which will help optimize extraction and beneficiation processes, thereby increasing the economic value of copper-nickel ores.

The study of REEs and noble elements in micromineral inclusions within the copper-nickel and copper ores of Ulytau is a crucial stage in the comprehensive exploration of the ore resources of the region.

The goal of the study is to investigate REEs and noble metal mineralization in the copper-nickel and copper ore bodies of Ulytau to strengthen the mineral resource base of platinoids and rare earth elements in the Republic of Kazakhstan.

Project Objectives:

To achieve this goal, the following research objectives must be addressed:

1. Study the forms of occurrence of rare earth elements and noble metals in the copper-nickel and copper ores of Ulytau.
2. Assess the distribution of noble metal and REE mineralization in sulfides by studying adjacent areas with previously identified copper-nickel and copper occurrences in Northern Ulytau.
3. Conduct experimental research involving the collection and analysis of archival and published materials, fieldwork for sampling from different parts of Ulytau for various types of analysis, and direct laboratory work including mineralogical-petrographic and geochemical analyses to evaluate the potential value of the rocks and determine their genesis.
4. Based on laboratory data, establish geochemical patterns of REE and noble metal mineralization distribution in Ulytau. The analysis of geochemical and mineralogical data will aid in determining the genesis of noble and rare earth elements, which in turn will help define distribution patterns and exploration indicators of REEs and noble metals in similar ore types.

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