Tentative Outline (Preliminary Proposal of Thematic Issue)

Special/Thematic Issue for the journal Current Chinese Science - Mineralogy

Title of the Thematic Issue: Critical Metal Deposits

Guest Editor's Name: Huan Li

- **Scope of the Thematic Issue (Brief introduction / abstract explaining the Thematic Issue):**

Critical metal or critical mineral is a new concept of resources put forward internationally in recent years. It refers to the general term of a class of metal elements and their deposits that are necessary for the safe supply of high risks in today's society, mainly including rare earth, rare and precious metals. These metals have unique material properties and have irreplaceable and important uses in cutting-edge industries such as new energy, information technology, aerospace, and national defense industries. In the future, the competition in international mineral resources and science and technology will largely focus on the game of controlling critical minerals. Therefore, the research on the metallogenic mechanism, effective exploration, and efficient utilization theory and technology of critical minerals has risen to the national strategic level of the world's developed economies. The critical metal minerals are mainly characterized by "rare", "accompanied" and "fine". The crustal abundance of key metal elements is low, and most of them are formed together with the main ore-forming elements. They often exist in deposits in the form of adsorption, isomorphism, and very fine minerals. These characteristics determine that it is difficult to understand the source transport accumulation process of key metal deposits and improve the efficient utilization level of key metal elements. Objectively, it is difficult to trace, identify and separate. Obviously, in order to achieve the goal of a breakthrough in ore-forming theory, guiding ore prospecting and separation theory, it is necessary to solve the core scientific problem of the process and driving mechanism of abnormal enrichment of low abundance metal elements, and three key scientific problems of the interaction of the earth's multiple circles and the enrichment of key metal elements, the metallogenic mechanism and law of key metal elements, and the occurrence state and enhanced separation mechanism of key metal elements.

Keywords: Rare metal; Geochemistry; Mineral prospecting and exploration; W-Sn deposits; Nb-Ta deposits; Li-Be deposits

Sub-topics:

- Geochemistry of critical metal deposits
- Geochronology of critical metal deposits
- Structural analysis of critical metal deposits
- Exploration of critical metal deposits.

Schedule:

- Complete Thematic issue submission deadline: **September 31, 2023.**

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