

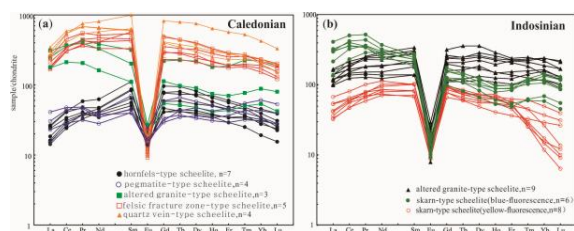
Two mineralization episodes of the Dushiling tungsten deposit in the Western Nanling Range, China

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The Dushiling tungsten deposit is a large-scale altered rock- and skarn-type tungsten deposit. The diagenesis and mineralization occurred in both the Caledonian and Indosinian periods. The diagenetic ages are 423-421 Ma and 217 Ma. The mineralization are 417 ± 35 Ma by the Sm-Nd dating of scheelite, 425 ± 12 Ma by the U-Pb dating of the hydrothermal titanite, and 218 ± 8 Ma by the U-Pb dating of the hydrothermal titanite, respectively.



The mineralization in the Caledonian period are much more intense than those in the Indosinian period. The mineralization in Caledonian belongs to the high-temperature hydrothermal type and altered granite type, which could be further divided into five types (Fig.a). The REE patterns of scheelite from the quartz vein, felsic fracture zone, pegmatite and hornfels are similar with MREE enrichment and Eu negative. However, the total REE of the former two types are much higher than those of the later two types. The REE patterns of scheelite from the altered granite are characterized by obvious LREE enrichment, with medium REE concentrations than the former four types (Fig. a).

In Indosinian, Scheelite are found in skarn and altered granite. Two kinds of scheelite could be divided by the fluorescence. Most scheelite samples fluoresce blue color, which contain much higher LREE and a little higher HREE than those with yellow fluorescent color. The scheelite from altered granite contain medium LREE and higher HREE than those two kinds of scheelite from skarn (Fig. b).

Dushiling deposit is characteristic for two periods of diagenesis and mineralization and so many mineralization types in one deposit.

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