New Discovery of the Zhuxi Tungsten-Copper Deposit, Jiangxi Province

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The project was initiated by Jiangxi Geological Prospecting Fund in 2010, and double-stage linkage was achieved by central and local fund in 2013. The prospecting breakthrough of scheelite and copper has been achieved in this region. The principal types of the Zhuxi tungsten-copper deposit are skarn type and granite type.

1 Regional Mineralizing Setting

Cu-Au polymetallic metallogenic prospective areas of Taqian-Qinghua are situated in the eastern segment of Qinhang Metallogenic Belt. The Upper Carboniferous Huanglong Formation, Chuanshan Formation, and Permian Maokou Formation, came into contact with Yanshanian granite, and this became the major occurrence position of the skarn deposit. Yanshanian magmatic activity was frequent in this region.

2 Ore-Controlling Structure

The formation of metallogenic belt is controlled by the northeastward faults of Taqian-Zhuxi-Fuchun. Small intrusions and dyke intrusion, such as granite-porphry and granodiorite, was discovered in the fault zone. The intrusion and the distribution of Skarn tungsten-copper deposit are controlled by the fault structure, which is on the unconformity surface of the Huanglong Formation and Mesoproterozoic epimetamorphic rock series.

3 Metallogenic Rock Body

There’s no big outcrops founded on the surface, the biotite adamellite, which is complete mineralization, was founded in the drilling. The biotite adamellite contacted with limestone of Carboniferous and Permian, which led to the thick skarn. However, the skarn has not been developed in the intrusions. The U-Pb isotopic age determination of the intrusion is 138.8±2.2My.

4 Deposit Characteristics

The size of the mineralized zone is 2000m in length, 800m in width, and 1800m in extension. The copper orebody is situated on the top, and the copper-tungsten orebody is beneath the copper orebody. The region is a super-large concealed deposit. The metallogenic model is “Multinity”: the upper is hydrothermal vein-type, the medium-deep is skarn-type (probably) and the deep part is porphyry-type.

The genesis of the Zhuxi tungsten-copper deposit has a significant relationship to I-S type magma intermediate-acid magmatite of Late Yanshanian.

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