

郭现轻, 闫臻, 王宗起, 王涛, 吴发富, 付长垒, 候可军, 李继亮. 2011. 西秦岭谢坑矽卡岩型铜金矿床地质特征与矿区岩浆岩年代学研究. 岩石学报, 27(12): 3811-3822

西秦岭谢坑矽卡岩型铜金矿床地质特征与矿区岩浆岩年代学研究

作者 单位

[郭现轻](#) [Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, China](#)

[闫臻](#) [Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, China](#)

[王宗起](#) [Institute of Mineral Resources, Chinese Academy of Geological Sciences, Beijing 100037, China](#)

[王涛](#) [Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, China](#)

[吴发富](#) [Institute of Mineral Resources, Chinese Academy of Geological Sciences, Beijing 100037, China](#)

[付长垒](#) [Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, China](#)

[候可军](#) [Institute of Mineral Resources, Chinese Academy of Geological Sciences, Beijing 100037, China](#)

[李继亮](#) [Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing 100029, China](#)

基金项目: 本文受国家自然科学基金项目(40772137)、中国地质调查局地质调查项目(1212010911033)和国家"十一五"科技支撑计划课题(2006BAB01A11)联合资助。

摘要:

谢坑铜金矿床位于西秦岭造山带西段,区域内主要出露下二叠统大关山群和下三叠统隆务河群,构造和岩浆活动发育。岩石学研究表明,谢坑铜金矿区内出露侵入岩主要为辉长闪长岩和辉长岩,它们是岗察岩体的重要组成部分。在辉长闪长岩与二叠纪灰岩接触带部位发育铜金和铁矿化并形成相关工业矿体。矿石类型主要有块状、脉状和浸染状三类。磁铁矿、磁黄铁矿表现为块状,黄铜矿为脉状和浸染状;脉状和浸染状黄铜矿穿插于块状磁铁矿矿石现象十分普遍,含金碳酸盐石英脉主要沿着矿石裂隙发育。围岩蚀变呈现清晰的蚀变分带现象,自岩体向外依次表现为钾化、青磐岩化和矽卡岩化。其中矽卡岩化主要发育于辉长闪长岩与灰岩接触带部位,与成矿关系密切,磁铁矿矿化主要发育于晚期矽卡岩阶段,磁黄铁矿、黄铁矿、黄铜矿等金属硫化物以及毒砂等矿物主要形成于早期硫化物阶段,金矿化主要发育于石英硫化物阶段。LA-ICP-MS锆石U-Pb测年结果表明,辉长闪长岩和角闪安山岩分别形成于 243.8 ± 1.0 Ma和 242.1 ± 1.2 Ma。该成岩、成矿时代与区域构造岩浆、成矿事件相一致。这些结果表明,谢坑铜金矿床为与西秦岭中三叠世弧岩浆作用密切相关的矽卡岩型矿床。

英文摘要:

The Xiekeng skarn-type Cu-Au deposit is located in the western part of the West Qinling terrane. The Lower Permian Daguanshan Group and Lower Triassic Longwuhe Group crop out within and around of this deposit. Tectonic and magmatic activities are very abundant regionally. Petrological results indicate that the Gangcha complex in the Xiekeng deposit mainly consists of intermediate-basic igneous rocks of gabbroic diorite and gabbro. The Cu-Au and Fe mineralization is hosted in the contact zone between Gangcha complex and Permian lenticular limestones. Massive, veinlike and disseminated textures are primary type of this deposit. Magnetite and pyrrhotine ore is mainly massive, but chalcopyrite ore is either veinlike or disseminated. Gold mineralization commonly occurs within the carbonate-quartz veins. The distinctive altered zone is marked on the outcrops, which varies from potassic alteration, prophyllitization to skarnization toward marble spatially. The skarn alteration, which occurs at the contact zone between gabbroic diorite and limestone, is closely related to mineralization. LA-ICP-MS zircon U-Pb dating of gabbro-diorite and amphibole-andesite yields concordant ages of 243.8 ± 1.0 Ma and 242.1 ± 1.2 Ma respectively, which indicates that the Xiekeng skarn-type deposit should be formed in the mid-Triassic. Our results indicate the Xiekeng deposit should be formed in the process of the Triassic arc-magmatism in the West Qinling terrane.

关键词: [中三叠世岩浆作用](#) [矽卡岩型](#) [谢坑铜金矿床](#) [岗察岩体](#) [西秦岭](#)

投稿时间: 2011-01-24 最后修改时间: 2011-11-29

主办单位：中国矿物岩石地球化学学会

单位地址：北京9825信箱/北京朝阳区北土城西路19号

本系统由北京勤云科技发展有限公司设计

