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陕西柞山盆地池沟铜钼矿区含矿岩体的锆石U-Pb年龄和岩石成因

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摘要:

秦岭造山带柞山盆地多处发育与晚中生代中酸性小岩体有关的铜钼矿床(点),最近在池沟深部发现了厚大的斑岩型铜矿体,但对这些小岩体的形成时代和成因的研究很少. 本文选择池沟地区不同类型的花岗质岩石开展地球化学特征和锆石U-Pb测年的研究. 结果表明: 该区小岩体主要为闪长岩、石英闪长岩和斑状花岗岩,它们为钾质钙碱性I型花岗质岩石. 矿物学、地球化学和Sr-Nd同位素特征均暗示它们是上地幔和下地壳同熔的深熔岩浆产物. 与成矿密切相关的含矿岩体LA-MC-ICPMS锆石U-Pb谱和年龄为~145Ma, 结合区域地质资料和成岩成矿关系的研究,认为池沟含矿岩体形成于晚侏罗世-早白垩世,柞水盆地存在一期重要的晚侏罗世-早白垩世中酸性岩浆岩和相应的斑岩-矽卡岩铜钼金矿化,与华北地块南缘晚中生代岩体和相关的钼铅锌矿床形成于同一地质事件.

英文摘要:

There have plenty of Cu-Mo deposits (occurrences) which are genetically associated with intermediate-acid granitoid stock from the Zhashan basin in the Qinling Orogenic Belt, recently huge copper orebody has been discovered in the Chigou Cu-Mo deposit region, but the timing and petrogenesis of ore-bearing granitoids were poorly constrained. In this contribution, ore-bearing granitoids for the Chigou Cu-Mo deposit were selected; geochemistry and LA-MC-ICPMS zircon U-Pb data for these rocks have been carried out. They are dominantly quartz diorite, diorite and porphyritic granite in petrology, and geochemically belong to high potassic calc-alkaline I-type granitoid, geochemical and Sr-Nd isotopic evidence demonstrate that these rocks originated from partial melting of upper mantle and lower crust. The weight average $^{206}\text{Pb}/^{238}\text{U}$ ages for these ore-bearing granitoids are ~145Ma. In combined with regional geological characteristics and relation between igneous rocks and mineralization, it is proposed that the Chigou ore-bearing igneous rocks were formed during the Late Jurassic-Early Cretaceous time, and it is indicated that there have regional Late Jurassic-Early Cretaceous granitoid and porphyry-skarn Cu-Mo polymetallic deposits in the Zhashan basin, synchronously the formation of granitoid batholith or stock and the corresponding porphyry Mo-hydrothermal vein Zn-Pb-Ag deposits in South margin of North China Craton.

关键词: [LA-MC-ICPMS锆石U-Pb年龄](#) [斑岩铜矿床](#) [池沟地区](#) [柞山盆地](#)

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