张连昌,吴华英,相鹏,张晓静,陈志广,万博. 2010. 中生代复杂构造体系的成矿过程与成矿作用——以华北大陆北缘西拉木伦钼铜多金属成矿带为例. 岩石学报, 26(5): 1351-1362

中生代复杂构造体系的成矿过程与成矿作用——以华北大陆北缘西拉木伦钼铜多金属成矿带为例

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基金项目：国家重点基础研究发展规划项目(2006CB403506)资助

摘要：

西拉木伦钼铜多金属成矿带处于华北克拉通与中亚造山带的过渡区,是古生代古亚洲构造域与中生代西太平洋构造域的交汇部位。在中生代受多种构造体系的制约,如中亚造山带造山后期局部伸展、蒙古-鄂霍茨克俯冲-碰撞造山作用、古太平洋板块的向西俯冲和中国东部岩石圈减薄事件的影响等。西拉木伦成矿带成矿斑岩锆石U-Pb年龄和辉钼矿Re-Os同位素年龄资料显示,钼铜矿成岩成矿主要集中在260~220Ma、180~150Ma和140~120Ma三个时期。结合华北克拉通北缘构造演化历史,推测这三期成矿作用主要与造山后局部伸展、构造体系转折和陆内伸展(岩石圈减薄)过程有关,并相应建立了“车户沟式”、“鸡冠山式”和“敖伦花式”三类斑岩钼铜矿床成矿模式。进一步研究表明,岩石的酸碱性、岩浆来源、岩浆的氧逸度、岩浆演化方式、构造背景等因素,制约了成矿作用的专属性。

英文摘要：

The Xilamulun metallogenic belt, located between Central Asian Orogenic Belt and North China Craton, is situated at the junction between the Paleo-Asian Ocean and the west Circum-Pacific tectonic regime. The ore belt was controlled by some tectonic systems, such as post-collisional extension of the Central Asian Orogenic Belt, Mongolia-Okhosk orogen, west Circum-Pacific tectonic and lithosphere large-scale thinning. Molybdenite Re-Os and zircon U-Pb dating of the Xilamulun ore belt show three periods of mineralizations which occurred at 260~220Ma, 180~150Ma and 140~120Ma, respectively. Combined with the regional geology and geochemical study, we suggest that the mineralizations in the belt were formed during multiple geodynamic settings. The mineralization in 260~220Ma is probably related to a post-collisional extension stage with the generation of the porphyry molybdenum-copper deposits; The stage of 180~150Ma is related to a tectonic stress transformation from NS to EW; The large-scale mineralization occurred at 140~120Ma is related to the lithosphere thinning due to the upwelling of asthenosphere under the intra-continent extension. Based on geology and geochemistry of Mo-Cu deposits, authors suggest three ore-forming modes: i.e. “Chehugou”, “Jiguanshan” and “Aolunhua”-types. Study data show that ore-forming specialization are restricted by acid-alkali degree of host rock, magma source, oxygen fugacity of rock, evolvement fashion of magma and tectonic setting.

关键词：斑岩矿床 成矿专属性 中生代 西拉木伦成矿带 华北克拉通北缘

投稿时间： 2010-03-01 最后修改时间： 2010-04-01

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