

苏本勋,秦克章,唐冬梅,邓刚,肖庆华,孙赫,卢鸿飞,代玉财. 2011. 新疆北山地区坡十镁铁-超镁铁岩体的岩石学特征及其对成矿作用的指示. 岩石学报, 27(12): 3627-3639

新疆北山地区坡十镁铁-超镁铁岩体的岩石学特征及其对成矿作用的指示

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基金项目: 本文受国家自然科学基金重点项目(41030424)和中国科学院知识创新工程重要方向项目(KZCX2-YW-Q04-08)联合资助。

摘要:

新疆北山地区的坡十镁铁-超镁铁岩体在钻孔剖面上主要由辉长岩、纯橄岩和二辉橄岩组成,各岩相在矿物含量上具有渐变过渡的关系。主要组成矿物橄榄石、单斜辉石和尖晶石的化学成分显示系统的变化,而底部的二辉橄岩中的矿物成分具有"边缘反转"现象。这些特征表明坡十岩体的形成主要受结晶分异作用控制,亦有明显的壳源混染痕迹。以反应边形式出现在辉石边部的角闪石的出现,尖晶石的分解现象,以及闪石和金云母化学成分剖面上的系统变化揭示该岩体经历了堆晶后自上而下程度减弱的蚀变反应。在早期结晶的矿物相(橄辉岩和尖晶石)中现有硫化物颗粒或细脉产出,表明在岩浆演化的早期阶段确实发生了硫化物熔离的现象。硫化物总与含水矿物(金云母)或蚀变矿物(角闪石和纹石)相伴生的特点显示铜镍硫化物的形成和沉淀不仅与壳源混染有关,而且也与堆晶后的蚀变反应密切相关。

英文摘要:

Poshi mafic-ultramafic intrusion, located in Beishan area (Xinjiang), has the components of gabbro, dunite and lherzolite in its drill core profile, in which mineral modal varies continuously, and olivine, clinopyroxene and spinel show systematically compositional variations. 'Marginal compositional reversals' appear in the lherzolites at the bottom of the profile. These features suggest that the formation of the Poshi intrusion was mainly controlled by fractional crystallization and also had contributions from crustal contamination. The presence of amphibole as reaction rim of pyroxene breakdown of spinel, and chemical variations of hydrous minerals, indicate that the intrusion had been subjected to post-cumulus alterative reaction. The association of discrete sulfide grains and fine veins with early-stage formed minerals (olivine and spinel) suggests that sulfide segregation occurred in the early stage of the magmatic evolution. The crystallization and subsequent precipitation of sulfides was not only related to crustal contamination, but also closely related to post-cumulus alterative reaction as recorded by their occurrence always with hydrous minerals (e.g. phlogopite) and altered minerals (e.g. amphibole and serpentine).

关键词: [坡十镁铁-超镁铁岩](#) [结晶分异](#) [蚀变反应](#) [铜镍成矿作用](#) [新疆北山](#)

投稿时间: 2011-05-13 最后修改时间: 2011-07-21