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福建马坑铁（钼）矿床矽卡岩矿物学特征及分带研究

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摘要：

马坑大型铁（钼）矿赋存于莒舟-大洋花岗岩体外接触带黄龙组（C_2h）灰岩和林地组（C_1l）碎屑岩层间构造破碎带中，铁矿与矽卡岩密切共生，但矿床成因尚存在争议。本文就马坑铁矿矽卡岩进行了矿物学特征研究。电子探针分析结果表明：该矿矽卡岩矿物组合主要为辉石、石榴子石和钙蔷薇辉石，退化蚀变岩矿物组合为角闪石、绿帘石、绿泥石、石英等。单斜辉石以透辉石和钙铁辉石为主，仅存在少量锰钙辉石；似辉石为钙蔷薇辉石和蔷薇辉石；石榴子石端元成分以钙铁榴石为主，钙铝榴石少量；角闪石属于钙角闪石，矿物学特征表明它们形成于相对较氧化的条件下。马坑铁矿的矽卡岩是由热流体沿灰岩与碎屑岩之间层间构造破碎带交代形成的，铁矿石大部分产于矽卡岩内，磁铁矿多稍晚于矽卡岩，不仅广泛交代矽卡岩，而且还直接交代灰岩、砂岩等围岩，呈交代结构；主矿体下盘常出现厚层石英岩，碎屑岩也出现了明显的交代，矽卡岩分带现象普遍，与典型矽卡岩矿床特征一致。结合矿床地质特征，马坑铁矿矿床类型应为层控矽卡岩型矿床。

英文摘要：

The Makeng Fe-Mo deposit is a large deposit hosted in the interlayer fracture zone between carbonates of Huang long Formation (C_2h) and clastic rocks of Lindi Formation (C_1l) at the exo-contact zone of the Juzhou-Dayang granite. The iron ore are closely coexisting with skarns. However, the ore genesis here has still been controversial. In this pap er, we studied the mineralogical characteristics of skarns in Makeng Fe-Mo deposit with electron microprobe analysis, which showed that the mineral assemblages of skarns in this deposit mainly consisted of pyroxene, garnet and busta mite. The retrograde altered minerals were comprised of chlorite, epidote, amphibole and quartz. The mineral composi tion of clinopyroxene are diopside, hedenbergite, and a small amount of johannsenite. Pyroxenoids are mainly compo sed by bustamite and rhodonite. The end member of garnet is dominated by andradite, with minor grossularite. The a mphibole in this deposit can be classified into calcic amphibole. All the mineralogical characters of skarns showed that they were mainly formed under relative oxidizing conditions. The skarns in Makeng Fe-Mo deposit resulted from the m etasomatism formed by thermal fluid flowing along the interlayer fracture zones between limestone and clastic rocks, most iron ore hosted in the skarns, usually the magnetites formed later than the skarns and constituted a metasoma tic texture, not only replaced skarns widely, but also direct alternated limestone, sandstone in the wall rock; the foot wall of main orebody often appeared thick quartzite, furthermore the metasomatic also appeared obvious in clastic ro cks. The skarn zonations were widespread in the deposit, consistent with typical skarn-type ore deposits. Combining the geological features with mineralogical characteristics of skarns in the Makeng Fe deposit, it shows that the deposi t is a strata-bound skarn-type deposit.

关键词：矽卡岩 分带 电子探针分析 层控 马坑铁（钼）矿床

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