$^{87}Sr/^{86}Sr)_i$ 值变化于0.70878~0.71349之间;$\varepsilon_{Nd}(t)$值变化于-7.2~-8.6之间,$f_{Sm/Nd}$=-0.27~0.16,t_{2DM} =1511~1637Ma,$(^{206}Pb/^{204}Pb)_i$=18.588~18.955,$(^{207}Pb/^{204}Pb)_i$=15.660~15.682,$(^{208}Pb/^{204}Pb)_i$=38.935~39.168,μ值介于*9.54~9.59,*ω值介于36. 77~38.13。岩石地球化学和同位素组成特征表明大洋-莒舟花岗岩属于高分异壳源型花岗岩,形成于岩石圈减薄的背景下。花岗岩主要来源于元古代地壳物质,有EMⅡ型富集地幔组分的参与,使花岗岩的地壳留存年龄的降低(1.51~1.63Ga)。
Makeng Fe deposit is a large strata-bound skarn-type magnetite deposit. Juzhou-Dayang granite exposed on either side of Makeng deposit, and had genetic relationship to ore bodies. The SHRIMP ziron U-Pb age of Dayang granite is 132.6±1.3Ma, MSWD=1.3; The LA-ICP-MS ziron U-Pb age of Juzhou granite is 129.6±0.8Ma, MSWD=2.3, indicating that they formed in Early Cretaceous, which identified with the time when Makeng deposit (130~133Ma, Re-Os age) were formed. Juzhou-Dayang granite is regarded as the weakly peraluminous-metaluminous granite, which is characterized by high silicon, enrichment of alkali, low calcium and magnesium, and high differentiation index. The rocks have high and remarkably varying REE, and their distribution patterns show LREE enrichment with gentle right oblique deviation, and a "V" model characterized by significant negative Eu anomaly; The trace elements compositions are strongly enriched in Rb, U, Th and La and considerably depleted in Ba, Sr, P and Ti; $(^{87}Sr/^{86}Sr)_i$ =0.70878~0.71349, $\varepsilon_{Nd}(t)$=-7.2~-8.6, $f_{Sm/Nd}$=-0.27~0.16, t_{2DM}=1511~1637Ma, $(^{206}Pb/^{204}Pb)_i$=18.588~18.955, $(^{207}Pb/^{204}Pb)_i$=15.660~15.682, $(^{208}Pb/^{204}Pb)_i$=38.935~39.168, μ=9.54~9.59, ω=36.77~38.13. The petrogeochemistry and isotopic characteristics of Dayang-Juzhou granite show that it is regarded as the crust-derived type granite, and experiences high differentiated evolution. The lithospheric thinning in relation to paleo-Pacific plate is a likely responsible mechanism for their formation. The magma sources of the Dayang-Juzhou granite mainly derived from Proterozoic crustal materials, but also involved some portions of EMII component, which reduced crustal residence age of the granite."/>

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福建龙岩大洋-莒舟花岗岩锆石U-Pb年龄和Sr-Nd-Pb同位素特征及其地质意义

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摘要:

马坑铁矿是一个大型层控矽卡岩型矿床,大洋、莒舟花岗岩分布于铁矿东西两侧,与铁矿关系密切。本文利用LA-ICP-MS锆石U-Pb定年法测得莒舟花岗岩年龄为129.6±0.8Ma,MSWD=2.3,利用SHRIMP锆石U-Pb定年法测得大洋花岗岩年龄为132.6±1.3Ma,MSWD=1.3,它们都形成于早白垩世,与马坑铁矿辉钼矿Re-Os年龄(130~133Ma)一致。大洋-莒舟花岗岩具高硅、富碱、贫钙镁和高分异指数等特点,属弱过铝或准铝质花岗岩;岩石稀土元素含量较高,配分模式呈轻稀土富集并缓向右倾斜,呈明显铕负异常的"V"型展布;微量元素具有Rb、U、Th、La等元素强烈富集而Ba、Sr、P、Ti 等元素相对亏损的特点;大洋岩体的$(^{87}Sr/^{86}Sr)_i$ 值变化于0.70878~0.71349之间;$\varepsilon_{Nd}(t)$值变化于-7.2~-8.6之间,$f_{Sm/Nd}$=-0.27~0.16,t_{2DM} =1511~1637Ma,$(^{206}Pb/^{204}Pb)_i$=18.588~18.955,$(^{207}Pb/^{204}Pb)_i$=15.660~15.682,$(^{208}Pb/^{204}Pb)_i$=38.935~39.168,μ值介于*9.54~9.59,*ω值介于36. 77~38.13。岩石地球化学和同位素组成特征表明大洋-莒舟花岗岩属于高分异壳源型花岗岩,形成于岩石圈减薄的背景下。花岗岩主要来源于元古代地壳物质,有EMⅡ型富集地幔组分的参与,使花岗岩的地壳留存年龄的降低(1.51~1.63Ga)。

关键词: 大洋-莒舟花岗岩 锆石U-Pb年龄 Nd-Sr-Pb同位素特征 福建

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