

论文

新疆达拉布特超镁铁岩成因——来自铬尖晶石的证据

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摘要:

通过研究西准噶尔达拉布特蛇绿混杂岩中方辉橄榄岩和橄榄辉石岩的岩石学特征, 分析方辉橄榄岩广泛发育的铬尖晶石和斜方辉石构成的蠕虫状共生连晶结构的成因, 得出结论认为: 这种共生连晶结构不是前人所认为的文象结构或者石榴石的后成合晶, 而是原始地幔岩熔融形成富铬岩浆的演化产物。这种富铬岩浆高度分异形成铬铁矿块体(即萨尔托海铬铁矿床)后, 熔体进入地幔岩中结晶形成铬尖晶石和斜方辉石的蠕虫状共生连晶结构。因此, 铬尖晶石与辉石的共生连晶结构可以作为豆荚状铬铁矿的重要找矿标志。方辉橄榄岩中的斜方辉石发育铬尖晶石出溶结构, 出溶棒的成分特点表明, 该结构是达拉布特蛇绿岩在快速就位过程中环境氧逸度突然升高诱发变质反应的结果。

关键词: [达拉布特](#); [蛇绿岩](#); [铬尖晶石](#); [共生连晶结构](#); [出溶结构](#); [新疆](#)

Petrology of ultramafic rock in Darbut ophiolite (Xinjiang), evidence from Cr spinel

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Abstract:

This paper reports the investigation on the petrology of spinel harzburgite and olivine pyroxenite in the Darbut ophiolitic mélange, as well as the worm like intergrowth texture composed of Cr spinel and orthopyroxene wide spreading in harzburgite (Western Junggar, Xinjiang). Our study shows that the observed intergrowth texture is not a graphic texture or a symplectite as assumed by previous research, instead, it is a product of the evolution of the Cr rich magma formed after the melting of the primitive mantle. After highly fractionating, this Cr rich magma formed massive chromite (i.e., Saertuohai chromite deposit), and the melt moved into the mantle rock, and formed the worm like intergrowth texture consisting of Cr spinel and orthopyroxene. Therefore, the intergrowth texture of Cr spinel and pyroxene can be an important indicator for podiform chromite exploration. We also report the exsolution texture of Cr spinel in orthopyroxene in the studied harzburgite, and suggest that it is the result of a metamorphic reaction induced by the drastic increase of oxygen fugacity during the rapid emplacement of Darbut ophiolite.

Keywords:

[Darbut](#); [ophiolite](#); [Cr spinel](#); [intergrowth texture](#); [exsolution texture](#); [Xinjiang](#)

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