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摘要:

东喜马拉雅构造结核部的南迦巴瓦群是经历了高压麻粒岩相峰期变质、角闪岩相退变质和强烈混合岩化作用形成的以含有高压麻粒岩透镜体或夹层为特色的变质岩组合。地质地球化学研究表明产于退变质高压麻粒岩中的含石榴石花岗岩脉具有高钾、富铝、轻稀土强烈富集、分馏程度很高、重稀土相对亏损、Eu强烈亏损、大离子亲石元素及放射性元素相对原始地幔值强烈富集、Rb/Sr>1.4的特征。利用花岗岩的主要成分及锆的含量估算的岩浆初始温度为792~801℃,略低于南迦巴瓦群的峰期变质温度850℃。锆石SHRIMP U-Pb定年结果显示锆石核部年龄集中在519~525Ma之间,揭示出印度地块经历泛非期构造运动改造的痕迹。锆石边部主要存在39~44Ma、24~25Ma和7.3Ma三个年龄段,前者代表了花岗岩浆的侵位时代,第二个年龄段是对MCT和STDS构造热事件改造的反映,后者揭示出构造-浅表反馈作用的信息。说明含石榴石花岗岩脉是在南迦巴瓦群折返过程中近等温降压条件下地壳岩石发生“干”深熔作用形成的高钾过铝质钙碱性花岗岩,以及南迦巴瓦群在经历峰期变质作用后很快就开始折返,并在后碰撞过程中经历了藏南拆离系(STDS)和主中央冲断带(MCT)构造事件及后期构造-浅表反馈作用的影响。

英文摘要:

The Namche Barwa complex, located at the core of the eastern syntaxis of the Himalayan orogenic belt, has been subjected to the high-pressure granulite-grade metamorphism, amphibolite-grade retrogressive metamorphism and migmatization, and is the metamorphic rocks with high-pressure granulite lens or interlens. The major and trace element data of the garnet-rich granite in the retrogressive granulite show that (1) they are high potassium, aluminum-rich; (2) they are strongly enriched in LREE with high fractional degree, depleted in HREE, and enriched in LILE and RHE relative to primordial mantle; (3) they have substantial negative Eu anomalies, and Rb/Sr>1.4. The magmatic initial temperature are ranging from 792℃ to 801℃ estimated by the major data and Zr contents for garnet-rich granite, which is lower than the peak metamorphic temperature (850℃). The zircon SHRIMP U-Pb dating show that (1) the ages for the inherited cores are ranging from 519Ma to 525Ma, exhibit the Namche Barwa complex rocks had been influenced in the pan-African movement; (2) the latest growth rim of zircon grains have three stage ages of 39~44Ma, 24~25Ma and 7.3Ma, the first is the forming time of garnet-rich granite veins, the second shows the following MCT and STDS tectonic event in later Oligocene, and the last indicates the tectonic-surficial feedback information in later Miocene. To sum up, the garnet-rich granite veins in the retrogressive granulite are high-K, peraluminous calc-alkaline granite, formed by fluid-absent partial melting of the lower crust under the condition of isothermally decompression during rapid exhumation of the Namche Barwa complex, and the exhumation of Namche Barwa complex followed on the heel of the peak metamorphism. The garnet-rich granite had been changed during the movement of STDS and MCT, and tectonic-surficial feedback.

关键词: [含石榴石花岗岩](#) [锆石SHRIMP U-Pb定年](#) [南迦巴瓦群](#) [东构造结](#)

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