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## "Nanogranites" enclosed within zircon in gneisses in the Nove Dvory, Czech Republic

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The inclusions enclosed within zircon in the Gfoehl migmatitic gneisses at the Nove Dvory area, Moldanubian Zone of the southern Bohemian Massif, Czech Republic were observed by transmission electron microscope (TEM) and "nanogranites" are first found in the zircon. The specimens for TEM observation were prepared by focused ion beam (FIB). The phase of the inclusions were determined by the electron diffraction pattern and chemical analysis by TEM-EDX. Kobayashi et al. (2008) provided evidence of former coesite in SiO<sub>2</sub> phase inclusions in zircon grains extracted from the Gfoehl migmatitic gneisses in the Nove Dvory area.

The inclusions enclosed within zircon consist of the various combination of minerals which are quartz, plagioclase feldspar, alkali feldspar, muscovite and so on. Inclusions has the size in the range 10 to 100um. The many composed minerals is sub-micronmeter to micronmeter and some is several ten nanometer. Moreover, one inclusion has negative crystal-like shape. These feature of the inclusions are similar to the inclusion enclosed within garnet reported by Cesare et al. (2009) and Hiroi et al. (2010) and these were called "nanogranites." However, the glassy inclusions which were reported by them were not observed in the present study. Quartz did not have the microstructure such as Dauphine or Brazil twins and alkali feldspar also have no-microstructures such as exsolution lamellae, twins and so on. On the other hand, plagioclase feldspar has only albite twins and does not have the exsolution lamellae and anti-phase boundary. Although these results indicate that these "nanogranites" is the partial melt at the high temperature metamorphism, these have some important problems.

Keywords: Zircon, Nanogranites, TEM