

Metamictization of Zircon in Corundum-Bearing Basalt in Bangkokacha, Chanthaburi, Thailand

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Basaltic rock in the eastern part of Thailand (Bangkacha, Chanthaburi Province) is the corundum-bearing basalt. The age of this basaltic rock is in between 0.44 ± 0.11 and 3.0 ± 0.19 Ma (Barr and Macdonald, 1981), (Sutthirat et al., 1994). In this area, it can be found not only the famous blue, green, yellow and star's sapphire but also garnet, spinel, pyroxene and zircon. Zircon ($ZrSiO_4$) has been investigated in this study. It can incorporate radioactive elements such as uranium and thorium. These radioactive elements emit alpha particles, which damage the crystal structure of zircon. This process is called metamictization. The degree of metamictization depends on the age of zircon and the quantity as well as the kind of radioactive elements.