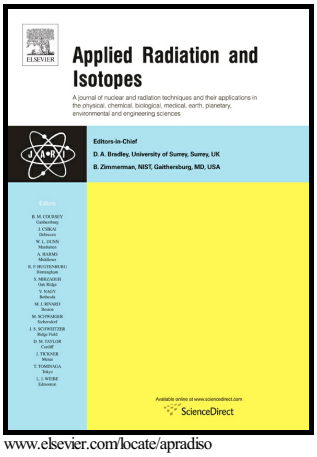

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Abstract

The Keffi area hosts abundant pegmatite bodies as a result of the surrounding granitic intrusions. Keffi is part of areas that are geologically classified as North Central Basement Complex. Data on the mineralogy and mineralogical zonation of the Keffi pegmatite are scanty. Hence the need to understand the geology and mineralogical zonation of Keffi pegmatites especially at different depth profiles is relevant asa study of the elemental composition of the pegmatite is essential for the estimation of its economic viability. Here, the relative standardization method of instrumental neutron activation analysis (INAA) has been used to investigate the vertical deviations of the elemental concentrations of REEs. This investigation adopted the following metrices in investigating the vertical variations of REEs concentrations. Namely, the total contents of rare earth elements (∑REE); ratio of light to heavy rare earth elements (LREE/HREE), which defines the enrichment or depletion of REEs; europium anomaly (Eu/Sm); La/Lu ratio relative to chondritic meteorites. The study showed no significant variations in the total content of rare