GEOCHEMICAL SIGNATURES OF METATEXITE AND DIATEXITE MIGMATITE WITHIN GWARZO LOW GRADE METASEDIMENTS NW NIGERIA

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ABSTRACT

The study area shows a distinctive morphological and geochemical continuity from the early formed metasediments, to the metatexite (i.e. the banded orthogneiss and stromatic migmatite), to diatexite (i.e. nebulitic and nebulitic patch migmatite). The geochemistry indicates the decrease in Fe2O3, MgO, and TiO2 in the metatexite and diatexite with increasing silica, indicating feldspar ratio content rise. Also the modal mineralogy based on whole rock composition indicate the metasediment is rich in biotite and corondum, with small amount of quartz. The FeO + MgO vs K2O shows the compositional field and also correspond with mineralogical composition of the studied samples, with the metasediments rich in biotite and cordierite, which decreases as they are transformed to metatexite, with plagioclase and quartz replacing the earlier formed minerals and the nebulitic migmatite rich in K-feldspar.

Keywords:Biotite, Nebulite, Metatexite, Migmatite.