

GEOCHEMISTRY OF K-RICH GRANITES FROM ARMOOR, NIZAMABAD DISTRICT, TELANGANA: IMPLICATIONS FOR METASEDIMENTARY SOURCE

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Abstract

We present geochemical data on granite samples from Armoor, Nizamabad District in Telangana which is a part of the northern portion of Eastern Dharwar craton. This data is provided to better understand the petrogenesis and its significance in crust formation. The geochemistry of these granites suggests their alkali-calcic to alkalic character with obvious imprints of shoshonite series that as K-rich granites. The rocks are metaluminous to peraluminous with higher SiO₂, K₂O, large ion lithophile elements, light rare earth elements (LREE) concentrations, and lower heavy rare earth elements (HREE). Significantly negative europium anomalies, high Sr, Rb, and Rb/Sr ratios, all point to partial melting of pre-existing metasedimentary sources with residual plagioclase. We propose that these granites were developed by melting of metasedimentary sources, while the sanukitoid melts provided the necessary heat for melting of the metasediments to evolve into granites. The fact that these granites came from an older crust during the Neoproterozoic stabilization of continental crust in Dharwar Craton shows that the older crust was reworked.

Keywords: Armoor granite, shoshonite series, potassic granite, geochemistry and metasediments.