

## **GEOCHEMISTRY AND PETROGENESIS OF THE NAWABPET GRANITOIDS FROM MAHABUBNAGAR DISTRICT, TELANGANA, SOUTHERN INDIA**

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### **Abstract**

This paper presents results of field, petrographic and geochemical investigations on the Nawabpet granitoids in Mahabubnagar District, Telangana, in the northern section of the EDC. The Nawabpet granite consists of grey and pink granites that host mafic magmatic enclaves. The granites contain mainly plagioclase, K-feldspar, quartz, biotite and exhibit sericitization and deformation. The granites have high SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, and K<sub>2</sub>O and low Na<sub>2</sub>O, TiO<sub>2</sub>, and CaO with metaluminous to peraluminous nature and are of shoshonite series representing K-rich granites. They exhibit negative and positive patterns of major and trace elements. Additionally, the granite shows high LILE and a steady rise in K<sub>2</sub>O concentration with differentiation. On variation diagrams, these granites define linear to sub-linear patterns. The granites have higher total REE concentration with fractionated patterns of REE (avg. La/Yb N = 59.3) and Eu showing both positive or negative anomalies, signifying residual liquid plagioclase. The K-rich granites have been formed by remelting of earlier TTG and metasedimentary sources.

*Keywords:* Nawabpet, K-rich granite, alteration, remelting.