

PERALUMINOUS GRANITES: POTENTIAL SOURCE FOR URANIUM MINERALISATION IN KOPPUNURU AREA, GUNTUR DISTRICT, ANDHRA PRADESH.

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Abstract

Koppunuru area lying to the western part of Palnad sub-basin exposes granitic rocks with high intrinsic uranium content which form the basement for Banganapalle and Narji Formations of Kurnool Group. These granites are potash rich, low calcic and peraluminous (A/CNK ratio > 1.1) in nature and vary from granite to granodiorite. Granites show overlapping S-type (peraluminous, collisional origin) and A- type characteristics with high U/Th ratio (0.05 – 24.50, X=4.41). Petrographically, these granites consist of orthoclase, microcline, perthite, plagioclase and quartz with associated ore minerals like pyrite, chalcopyrite, galena, goethite and leucoxene. Mineral alterations are characterised by assemblage of sericite, muscovite and chlorite. Primary uranium minerals pitchblende and coffinite occur as stringers and veins, besides variable concentrations of uranium, biotite and hydrated iron oxide along the basement fractures

Keywords: Geochemical, Peraluminous, Basement fractures, Koppunuru.