PETROLOGICAL AND GEOCHEMICAL STUDIES OF PRECAMBRIAN GRANITOIDS FROM CHERLAPALLY AREA, NALGONDA DISTRICT, TELANGANA STATE, INDIA

M. Anjaneyulu¹, K. Nagaraju², and I. Panduranga Reddy³
¹Department of Geology, Mahatma Gandhi University, Nalgonda, Telangana
²&³ Department of Geology Osmania University Hyderabad, Telangana
¹E-mail: geoanji2011@gmail.com

Abstract
Granitoids from Cherlapally area of Nalgonda District are mainly classified into grey and pink granites and migmatites. They occasionally contain older mafic enclaves and are cut by younger dolerite dykes, alaskites and quartz veins. Granitoids form elongated ridges, small mounds, sheeted outcrops and batholithic domes in the study area. They are characterized by massive interlocking granular structure with coarse grained phaneritic texture. They are mainly composed of feldspar (microcline and plagioclase) and quartz as essential minerals. Biotite and hornblende form minor minerals, chlorite, epidote and iron oxide occur in trace amounts. They plot in the restricted field of monzogranite on QAP diagram. The negative correlation between SiO₂ vs. CaO, TiO₂ and MgO indicates plagioclase fractionation as well as differential crystallization and hence there have been classified as monzogranites. These granitoids are subsolvus in character due the presence of two feldspars that were formed at below solvus (<400°C) temperature under wet conditions. Based on integrated field, petrography and geochemical studies it is suggested that these granitoids were generated by partial melting of lower crust due to magma upwelling.

Keywords: granitoids, alaskite, perthitic, myrmekitic, QAP diagram and subsolvus.