

**STUDY OF MICRO-MORPHOLOGY, MAJOR ELEMENT GEOCHEMISTRY AND
PALAEOCLIMATIC IMPLICATIONS OF CALCRETE DEPOSITS AT
SALUKKUVARPATTI VILLAGE, NEAR PANDALGUDI, VIRUTHUNAGAR
DISTRICT, TAMILNADU, INDIA.**

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Abstract

Calcrete has been formed as a widespread deposit in the regolith part centered on Salukkuvarpatti village and its surroundings near Pandalgudi region, Viruthunagar District of Tamilnadu. The schematic stratigraphic profile succession of calcrete deposit of the study area is cited. The macroscopic forms of calcrete of the study area are gravel, nodular, lumpy, hardpan and chalky nature. The microscopic observation reveals that microcrystalline or microsparitic calcite precipitation forms rimming around detrital quartz, feldspar and the other sap rock grains biotite, hypersthene and hornblende. Sometimes, it shows veining, void lining, lensoidal, and meshwork, displacive and replacive forms of precipitation. The major element geochemistry of calcrete indicates that CaO, SiO₂, Al₂O₃ and Fe₂O₃ are in more elevated concentration than the other oxides such as MnO, MgO, Na₂O, K₂O, TiO₂ and P₂O₅. The major element geochemistry and clay minerals content in calcrete deposits are used as proxies to explain the palaeoclimatic conditions as arid and semi-arid.

Keywords: Regolith, Micritic calcite, Sap rock grains, Major element geochemistry, Clay mineral, Palaeoclimate.