# Characterization of Feed and Flotation Products of Natural Graphite

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## Abstract

The mineralogical, physical and chemical characterization studies were carried out on the graphite feed material, flotation conecentrate and tailings of Sivaganga graphite deposit, Tamilnadu. The characteristics studies expose that the graphite raw material consists mainly quartz, graphite, clay, goethite/limonite, carbonates, feldspar, hematite and pyrite minerals are observed in trace level. The characterization study also reveals that associated minerals influence the flotation performance. Kaolinite and iron phase minerals are present more in the flotation concentrate rather than tailings either due to mechanical entrainment or locked. To avoid the mechnical entrainment, proper dosing of depressant reagent is used during flotation. XRD studies were carried out on feed, concentrate, tailings and their ash reveal that kaolinite and iron phase minerals are present more in concentrate rather than tailings.