

PETROGRAPHICAL AND MINERALOGICAL STUDIES OF BAUXITE AND FERRUGINOUS BAUXITE DEPOSITED OVER DECCAN TRAPS OF CENTRAL INDIA, MAINPAT PLATEAU, SURGUJA DISTRICT, CHHATTISGARH, INDIA

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Abstract

This study aims to depict the mineral assemblages in the bauxite/laterite deposits of Mainpat plateau, Surguja district, Chhattisgarh formed during the alteration of parent rock, the geo-environment of bauxite/ferruginous bauxite formation, and its related clay minerals. The bauxite in Mainpat plateau is formed by the alteration of Deccan Trap basalts. Petrographic studies showed that they are primarily composed of gibbsite and cliachite, with minor amount of goethite, hematite, and kaolinite. It exhibits well-formed pisolites and oolites of varying sizes that might have formed from hydrolytic action. Mineralogical investigation by XRD showed that the bauxite is formed from the mineral assemblage of gibbsite, boehmite, hematite, and anatase. The relative weight% of gibbsite varied from 30-54.54 with a minor amount of boehmite (weight% of 20), while weight % of hematite and anatase varied from 18.18-30 and 20-28.5 respectively.

Keywords: Bauxite/ferruginous bauxite, petrography, mineralogy, gibbsite, cliachite.