

Clay Mineralogy and its Relationship to Provenance in Oman Continental Shelf - Chabahar Area

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Abstract

Clay minerals in sediments can be controlled by weathering of source rocks, climate condition, transportation and deposition. In this research, clay minerals from Oman sea continental shelf in Chabahar area have been studied in order to interpret paleoclimate and also determine clay minerals provenance. The study of clay mineralogy by XRD, SEM and EDS led to identification of four types of clay minerals including Kaolinite, chlorite, illite and smectite. The most abundant clay mineral is kaolinite, and high percentage of this mineral is indicative of chemical weathering. The main source of clay minerals is felsic rocks. Kaolinite and illite in marine sediments are the products of long washed recycled sediments after several uplifting stages in active Makran subduction zone. The amount of chlorite and smectite is very low in studied sample, which is indicated by the lack of favorable condition for such minerals forming.

Keywords: *Clay minerals, Kaolinit, Source rock, Weathering, Oman Continental shelf.*
