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Macromolecular Organic Compounds and Clay Mineralogy in Sediments at Udaipur Coast, West Bengal, India

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Abstract: *Dominating tidal range along with near shore oceanic current affect the sediment distribution, The study was undertaken to synergize sediment depositional pattern alongside clay mineralogy, and sequential past vegetation data to discern palynology and reconstruct past ecology. For this ecologically challenging Udaipur Coast on the border of West Bengal and Orissa (India) was selected. Field studied were conducted, and samples were analyzed in the laboratory. X-ray Diffraction technique was used for clay mineral identification and palynology techniques for ecological reconstruction. For this three generation-dunes were analyzed. The intertidal zone was dominated by very fine to fine sand particles. Clayey sediments were present in this coastal domain. Illite and kaolinite dominated clays, but heavy minerals occurred simultaneously indicating their provenance from multiple sources of sediments without weathering under ocean tides. Aegiceras sp. Excoecaria, and Sonneratia, and strays of Cyperaceae, Poaceae, fungal spores and algal cyst were identified. Palynological analysis of the sediments from the down depth sections of the area indicated past geological environment. The study also showed that coasts are rapidly reshaping by fluvial marine processes, but remain youthful.*

Keywords: Clay minerals; Core samples; Palynomorphs; X-ray diffraction method.