

Sediment Properties and Provenance Study of Heavy Minerals Along Chinnavilai and Erayumanthurai Beach, South West Coast of India

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Abstract

The Chinnavilai and Erayumanthurai beach sediments of the Kanyakumari District consist of medium-grained, moderately well-sorted, unimodal, occasionally bimodal, mesokurtic, leptokurtic and platykurtic. The fine skewed and symmetrical nature of sediments implies the prevalence of high and low energy, entailing a mixed distribution of coarse and fine sediments. The washing and backwashing of waves cause the coarser sediments to retainment and entrapped amidst finer sediments. The heavy minerals distribution reflects that the less content in Erayumanthurai samples, whereas the Manavalakurichi, Enayam, Kurumpanai sediments comprise >60%. The oval shape zircon is devoid of inclusions, whereas, the euhedral zircons comprise subhedral inclusions. Distinct fractures in zircons are caused due to transportation by waves and currents. The garnet and zircon grains are well-rounded, implying the source for these sediments are an admixture of medium to high-grade metamorphic rocks, reworked sediments, charnockite, and granite gneisses.

Keywords : Sediment Texture, Provenance, Heavy Minerals, Kanyakumari, South West Coast of India

(Received : 07 July 2021 ; Revised Form Accepted : 26 September 2022)

<https://doi.org/10.56153/g19088-021-0047-14>