

SEDIMENT ACCRETION AND PROPORTIONAL
PROX IN THE TOWERS OF TUNING AND
AND PART, THERMODYNAMIC

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**SEDIMENT ACCRETION AND GEOCHEMICAL
PROXY IN THE RIVERS OF TERENGGANU AND
PAKA, TERENGGANU**

BY

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**A Project report submitted in partial fulfillment of
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ABSTRACT

Not much research has been conducted on Malaysian rivers especially in the geochemical field. This research was carried out in the Terengganu and Paka Rivers. Four cores were obtained from both areas where each core measured 14 cm. The sedimentation rate was determined by using $^{230}\text{Th}_{\text{excess}}$ and $^{230}\text{Th}_{\text{excess}}/^{232}\text{Th}_{\text{excess}}$ ratio and analyzed using ICP-MS. The sedimentation rate in Terengganu and Paka were 0.76 cm y^{-1} and 0.84 cm y^{-1} . The sediment's age was determined at the depth of 14 cm is 16.7 years and 18.9 years. Th profile measured displayed a linear increase with depth and these results were also observed for the other elements such as, Li, Al, Mn, Cu, Zn, and Pb. Normalization and Enrichment Factor of elements were carried out to determine the source origin. As a result, most of the geochemical elements were characterized as natural sources although there was a slight anthropogenic contribution.

ABSTRAK

Kajian saintifik terhadap sungai di Malaysia adalah terhad terutamanya dalam bidang geokimia. Empat teras sedimen telah diambil pada setiap lokasi dengan ukuran 14 sm setiap satu. Kaedah $^{230}\text{Th}_{\text{excess}}$ dan $^{230}\text{Th}_{\text{excess}}/^{232}\text{Th}_{\text{excess}}$ telah digunakan untuk menentukan kadar sedimentasi dan analisa elemen-elemen geokimia dengan menggunakan ICP-MS. Keputusan menunjukkan kadar sedimentasi di Sungai Terengganu adalah 0.76 sm/tahun dan 0.84 sm/tahun di Sungai Paka. Usia sediment ditentukan dengan pengiraan kedalaman bahagi kadar sedimentasi menunjukkan usia sediment pada kedalaman 14 sm adalah 16.7 tahun di Terengganu dan 18.9 tahun pada Sungai Paka. Th menunjukkan profil peningkatan secara linear mengikut kedalaman dan keadaan ini juga berlaku pada logam-logam yang lain seperti Li, Al, Mn, Cu, Zn, dan Pb. Normalisasi dan Faktor Pengkayaan juga dikaji untuk mengetahui asal usul unsur samada daripada aktiviti antropogenik atau secara semulajadi. Justeru itu, keputusan menunjukkan kebanyakan daripada logam-logam yang dikaji adalah berasal daripada sumber yang semulajadi walaupun terdapat sedikit pencemaran antropogenik.