

DETERMINATION OF AL, CR, FE AND MN CONCENTRATIONS IN
RELATION TO PARTICLE SIZE AND ORGANIC CARBON IN JOHOR
COASTAL SEDIMENT DURING PRE-MONSOON

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DETERMINATION OF AL, CR, FE AND MN CONCENTRATIONS IN
RELATION TO PARTICLE SIZE AND ORGANIC CARBON IN JOHOR
COASTAL SEDIMENT DURING PRE-MONSOON

By

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ABSTRAK

Sampel-sampel sedimen telah diambil dari 15 stesen di perairan Johor dan dikaji untuk aluminium, kromium, ferum dan mangan. Min julat kepekatan logam-logam tersebut adalah 1.02 % - 6.42 % bagi aluminium, 22.60 $\mu\text{g/g}$ - 57.16 $\mu\text{g/g}$ bagi kromium, 1.13 % - 2.76 % bagi ferum dan 222.43 $\mu\text{g/g}$ - 492.25 $\mu\text{g/g}$ bagi mangan. Kandungan karbon organik di dalam enapan berjulat di antara 0.47 - 2.09 % dengan min dan sisihan piawai bernilai 1.16 ± 0.39 %. Kandungan karbon organik ini berhubungan rapat dengan saiz partikel sedimen. Semakin halus saiz partikel, semakin tinggi kandungan karbon organik. Julat jenis-jenis enapan adalah dari jenis pasir medium ke pasir halus dengan analisa taburan enapan, pengisihan (sorting), kepencongan (skewness) dan kurtosis tidak menunjukkan satu pola tertentu. Purata taburan saiz nilai ϕ enapan-enapan berada di antara nilai 0.8577 ϕ kepada 2.4313 ϕ dan nilai kepencongan untuk semua stesen adalah negatif. Secara amnya, dari analisis yang dijalankan menunjukkan bahawa taburan enapan cenderung menjadi lebih kasar menghala ke pantai. Kepekatan Al, Cr, Fe dan Mn di kawasan lain kebanyakannya sama dengan Laut China Selatan.

ABSTRACT

Sediment samples were collected from 15 stations in Johor Coastal and analyzed for aluminium, chromium, ferum and manganese. The mean range for concentrations of metals were 1.02 % - 6.42 % for aluminium, 22.60 $\mu\text{g/g}$ - 57.16 $\mu\text{g/g}$ for chromium, 1.13 % - 2.76 % for ferum and 222.43 $\mu\text{g/g}$ - 492.25 $\mu\text{g/g}$ for manganese. Organic carbon in the sediment ranged from 0.47 to 2.09 % with a mean and standard deviation of 1.16 ± 0.39 %. The organic carbon content is closely related to the particle size of the sediment. The finer the particle size, the higher the organic carbon content. Sediments ranged from medium sand to finer sand, with mean size distribution, sorting, skewness and kurtosis showing no regular pattern. ϕ mean size distribution was in the range of 0.8577 ϕ to 2.4313 ϕ and the skewness values for all stations are negative. Generally, the sediments ranged from poorly to very poorly sorted and sediments tend to be coarser toward the coastal region. The Al, Cr, Fe and Mn concentrations in general are similar to other areas of the South China Sea.