

SECO-EMGAL PROFILE IN TERENGGANU AND PAHANG
NEARSHORE (SOUTH CHINA SEA) DURING
PREMONSOON SEASON

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GEOCHEMICAL PROFILE IN TERENGGANU AND PAHANG
NEARSHORE (SOUTH CHINA SEA) DURING PRE-MONSOON
SEASON

By

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:
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LIST OF ABBREVIATIONS

°C	degree Celsius
Ø	phi
µm	micrometer
gcm ⁻³	gram per centimeter cube
mL	milliliter
L	Liter
mg/L	milligram per liter
ng/L	nanogram per liter
µg/g	microgram per gram
ppm	part per million
st.	station
Al	aluminum
Cd	cadmium
Cr	chromium
Cu	copper
Fe	iron
Pb	lead
Mn	manganese
Zn	zinc
ICPMS	Inductive Couple Plasma-Mass Spectrometry
EDTA	Ethylene Diamine Tetraacetic Acid

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ABSTRAK

Saiz partikel, karbon organik dan logam berat bagi sedimen Terengganu dan Pahang telah dikaji. Sedimen Terengganu didapati lebih halus dari sedimen Pahang dengan purata min saiz $3.46 \pm 2.53 \text{ } \mu\text{m}$ dan $1.46 \pm 1.15 \text{ } \mu\text{m}$ masing-masing. Kandungan karbon organik bagi sedimen Terengganu berjulat dari 0.54 % hingga 2.67 % dan 0.24 % hingga 1.80 % bagi sedimen Pahang. Min karbon organik bagi kedua-dua kawasan Terengganu dan Pahang mencatat $1.03 \pm 0.40 \%$ dan $0.71 \pm 0.42 \%$ masing-masing. Kepekatan logam berat pada saiz $63 \text{ } \mu\text{m}$ mencatat $7.48 \text{ } \mu\text{g/g}$ untuk Co, $12.97 \text{ } \mu\text{g/g}$ untuk Cu, $17.09 \text{ } \mu\text{g/g}$ untuk Pb dan $56.35 \text{ } \mu\text{g/g}$ untuk Zn bagi sedimen Terengganu, dan $5.27 \text{ } \mu\text{g/g}$ untuk Co, $10.99 \text{ } \mu\text{g/g}$ untuk Cu, $23.24 \text{ } \mu\text{g/g}$ untuk Pb dan $29.58 \text{ } \mu\text{g/g}$ untuk Zn bagi sedimen Pahang. Perhubungan antara saiz partikel dan karbon organik bagi sedimen Terengganu dan Pahang didapati sangat lemah. Logam berat dalam sedimen Terengganu lebih dipengaruhi dengan saiz partikel kecuali logam kuprum, manakala bagi sedimen Pahang, kandungan karbon organik lebih penting untuk mempengaruhi kepekatan logam berat. Dari faktor pengkayaan dan normalisasi yang dijalankan, semua logam berat didapati berasal secara semulajadi.

ABSTRACT

The particle size, organic carbon and heavy metals concentration of Terengganu and Pahang sediments were measured. Terengganu sediment was found to be relatively finer compared with the Pahang sediment, with an average mean size of $3.46 \pm 2.53 \text{ }\mu\text{m}$ and $1.46 \pm 1.15 \text{ }\mu\text{m}$ respectively. The organic carbon content in Terengganu sediment varied between 0.54 % and 2.67 %, while Pahang ranged from 0.24 % to 1.80 %. Both areas contained respective $1.03 \pm 0.40 \text{ %}$ and $0.71 \pm 0.42 \text{ %}$ of average organic carbon. The mean concentrations of heavy metals for 63 μm fraction of the Terengganu sediments were 7.48 $\mu\text{g/g}$ for Co, 12.97 $\mu\text{g/g}$ for Cu, 17.09 $\mu\text{g/g}$ for Pb and 56.35 $\mu\text{g/g}$ for Zn, and 5.27 $\mu\text{g/g}$ for Co, 10.99 $\mu\text{g/g}$ for Cu, 23.24 $\mu\text{g/g}$ for Pb and 29.58 $\mu\text{g/g}$ for Zn in Pahang sediment. Correlation between particle size and organic carbon for Terengganu and Pahang sediments was found insignificant and weak. Heavy metals in Terengganu sediment is much more influenced by particle size except copper, while for the Pahang sediment, organic carbon content is more significant in affecting the metal concentration except for zinc. The calculated EF and normalization suggested that all the elements are of natural origin.