# GEOCHEMICAL AND SEDIMENTOLOGICAL CHARACTERISTICS OF THE SOUTH CHINA SEA SEDIMENTS OFF TERENGGANU DURING THE PRE AND POST MONSOON SEASONS

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2004




Lihat sebelah

# GEOCHEMICAL AND SEDIMENTOLOGICAL CHARACTERISTICS OF THE SOUTH CHINA SEA SEDIMENTS OFF TERENGGANU DURING THE PRE AND POST MONSOON SEASONS

**By**

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**Research report submitted in partial fulfillment of the requirements for the degree of Bachelor of Science (Marine Science)**

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**DEPARTMENT OF MARINE SCIENCE**
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## APPROVAL AND CERTIFICATION FORM
## RESEARCH PROJECT I AND II

I certify that the research report entitled: Geochemical And Sedimentological Characteristcs Of the South China Sea Sediments Off Terengganu During The Pre And Post Monsoon Seasons by LIEW DOR JIA, Matric No. UK 5669 have been read and all corrections recommended by the examiners have been done. This research report is submitted to the Department of Marine Science in partial fulfillment of the requirements for the degree of Bachelor of Science in Marine Science, Faculty of Science and Technology, Kolej Universiti Sains dan Teknologi Malaysia.

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| | |
|---|---|
| % | percentage |
| °C | degree Celsius |
| Ø | phi |
| g | gram |
| $g.cm^{-3}$ | gram per centimeter cube |
| $mg.L^{-1}$ | milligram per liter |
| L | liter |
| µm | micrometer |
| mm | millimeter |
| mL | milliliter |
| ppm | part per million |
| ppb | part per billion |
| Cu | Copper |
| Zn | Zinc |
| Pb | Lead |
| Co | Cobalt |
| Li | Lithium |
| Al | Aluminium |
| EDTA | Ethylendiamenetetra Acid |
| GPS | Global Positioning System |
| PSA | Particle Size Analyzer |
| ICP-MS | Inductively Coupled Plasma-Mass Spectrometry |

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## ABSTRAK

Saiz partikel sedimen telah dikaji untuk musim sebelum dan selepas monsun. Min saiz sedimen adalah lebih rendah selepas monsun. Julat min saiz bagi musim sebelum dan selepas monsun adalah -0.01 Ø hingga 6.80 Ø dan 0.03 Ø hingga 6.32 Ø masing-masing. Peratusan karbon organik berada dalam julat 0.60 % hingga 2.34 % sebelum monsun dan 0.24 % hingga 1.68 % selepas monsun. Kolerasi antara peratusan karbon organik dengan min saiz partikel adalah lemah. Kepekatan purata Cu pada musim sebelum dan selepas monsun adalah masing-masing 14.47 ± 6.44 $\mu g.g^{-1}$ dan 9.97 ± 5.14 $\mu g.g^{-1}$. Bagi Zn pula, kepekatan purata adalah 56.33 ± 24.90 $\mu g.g^{-1}$ sebelum monsun dan 60.74 ± 17.51 $\mu g.g^{-1}$ selepas monsun. Pb mempunyai kepekatan purata sebanyak 18.89 ± 5.76 $\mu g.g^{-1}$ sebelum monsun manakala 17.06 ± 5.81 $\mu g.g^{-1}$ selepas monsun. Kepekatan purata untuk Co pula adalah 7.66 ± 2.49 $\mu g.g^{-1}$ sebelum monsun dan 7.65 ± 3.61 $\mu g.g^{-1}$ selepas monsun. Logam berat yang terpilih tersebut mempunyai kolerasi yang lemah dengan min saiz partikel dan juga peratusan karbon organik. Pernormalan dan faktor pengkayaan menunjukkan sumber bagi Cu, Zn, Pb dan Co adalah semulajadi.

## ABSTRACT

Sediment particle size was studied during the pre and post monsoon seasons. The value of sediment mean size was found to be lower during the post monsoon seasons. The mean size ranged between -0.01 Ø to 6.80 Ø and 0.03 Ø to 6.32 Ø during both the pre and post monsoon seasons respectively. The organic carbon content ranged between 0.60 % to 2.34 % during the pre monsoon season and 0.24 % to 1.68 % during the post monsoon season. Correlation between organic carbon content and particle mean size was found to be weak. Cu had an average concentration of 14.47 ± 6.44 $\mu g.g^{-1}$ and 9.97 ± 5.14 $\mu g.g^{-1}$ during the pre and post-monsoons, respectively. Zn had an average concentration of 56.33 ± 24.90 $\mu g.g^{-1}$ and 60.74 ± 17.51 $\mu g.g^{-1}$ during the pre and post-monsoons, respectively. Pb had an average concentration of 18.89 ± 5.76 $\mu g.g^{-1}$ and 17.06 ± 5.81 $\mu g.g^{-1}$ during the pre and post-monsoons, respectively. Co had an average concentration of 7.66 ± 2.49 $\mu g.g^{-1}$ and 7.65 ± 3.61 $\mu g.g^{-1}$ during the pre and post-monsoons, respectively. The selected heavy metals had a weak correlation with both particle mean size and organic carbon content. Normalization and enrichment factor showed that the source for Cu, Zn, Pb and Co was of natural origin.