

A STUDY ON THE SEDIMENTOLOGICAL CHARACTERISTICS
AND ELEMENTAL CONTENTS OF BIDONG

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**A STUDY ON THE SEDIMENTOLOGICAL CHARACTERISTICS AND
ELEMENTAL CONTENTS OF BIDONG ISLAND SEDIMENTS**

By
MOHD FIRDAUS BIN MD SAYED

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

**DEPARTMENT OF MARINE SCIENCE
FACULTY OF MARITIME MANAGEMENT AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
2011**



**DEPARTMENT OF MARINE SCIENCE
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITY MALAYSIA TERENGGANU**

**DECLARATION AND VERIFICATION REPORT
FINAL YEAR RESEARCH PROJECT**

It is hereby declared and verified that this research report entitled:

A Study on The Sedimentological Characteristics And Elemental Contents Of Bidong Island Sediments by Mohd Firdaus Bin Md Sayed with Matric No.UK18285 have been examined and all errors identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfillment towards obtaining the Degree of Bachelor of Science (Marine Science) Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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In The Name of Allah The Most Gracious and The Most Merciful

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LIST OF ABBREVIATIONS

°C	Degree Celsius
g	Gram
Km	Kilometre
Km/h	Kilometre per hour
m	Meter
m/s	Meter per second
mg/l	Miligram per litre
ml	Milliliter
mm	Millimetre
µm	Micrometre
Ø	Phi

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ABSTRAK

Satu kajian telah dijalankan di sekitar Pulau Bidong untuk menentukan ciri-ciri umum sedimen, saiz butirannya serta kandungan elemen di dalam sedimen tersebut. Tiga puluh dua sampel stesen daripada lapan transet telah dikumpulkan di Pulau Bidong pada 23 Mac 2011. Sampel kemudian dianalisa menggunakan Kaedah Pengeringan Secara Tapisan untuk menentukan ciri-ciri sedimen dan kandungan elemen di dalam sampel menggunakan Mikroskop Elektron-Penyerap Tenaga. Keputusan kajian menunjukkan saiz butiran untuk kawasan kajian adalah antara -0.003 hingga $1.849 \text{ } \emptyset$ dengan nilai purata ialah $0.726969 \text{ } \emptyset$. Sedimen di kawasan kajian didominasi oleh pasir kasar (25%) dan pasir sangat kasar(25%),diikuti oleh pasir halus sebanyak 22%. Nilai penyusunan semua stesen adalah antara 0.528 hingga $1.369 \text{ } \emptyset$ dan nilai purata adalah $0.940406 \text{ } \emptyset$. Penyusunan didominasi oleh susunan sederhana (47%), dan diikuti oleh susunan buruk (41%). Julat bagi nilai kepencongan adalah antara -1.466 hingga $0.937 \text{ } \emptyset$. Kebanyakan stesen adalah sangat positif kepencongan dengan jumlah 35% dan yang kurang dominan ialah simetri dan kepencongan negatif sebanyak 16%. Nilai peratusan di kawasan kajian menunjukkan sangat leptokurtik mendominasi dengan nilai 66% diikuti oleh terlalu leptokurtik sebanyak 34%. Bagi analisis kandungan elemen, sebanyak 8 elemen (Mg,O,Fe,K,Ca,Al,Si,Cl) telah ditemui pada kawasan kajian. Keputusan menunjukkan kompoun yang paling banyak dan tinggi yang terdapat dikawasan kajian ialah SiO_2 (11stesen) dan diikuti oleh CaO (5stesen). Kompoun paling sedikit yang ditemui di kebanyakan stesen ialah K_2O (11 stesen).

ABSTRACT

A study was carried out around Bidong Island in order to determine the sedimentological characteristics and elemental contents in the sediments. Thirty two samples from eight transects were collected at Bidong Island on 23 March 2011. The samples were prepared for sedimentological characteristics (mean, sorting, skewness and kurtosis) using dry sieving method and elemental contents by Scanning Electron Microscope-Energy Dispersive Spectroscopy (SEM-EDS). Results showed that the mean size ranged between -0.003 to 1.85ϕ with an average value of 0.727ϕ . The area was dominated by coarse sand (25%) and very coarse sand (25%), followed by fine sand with 22%. Sorting ranged between 0.53 to 1.37ϕ and average value was 0.94ϕ . Sorting in the study area was dominated by moderately sorted (47%), and followed by poorly sorted (41%). The range of skewness was between -1.47 to 0.94ϕ . Most of the stations were very positively skewed (35%), very negatively skewed (28%), positively skewed (25%), symmetrical and negatively skewed with (6%). For kurtosis, the area was very leptokurtic (66%), followed by extremely leptokurtic (34%). For the elemental contents, there are 8 elements (Mg, O, Fe, K, Ca, Al, Si, Cl) that were found in the study area. Results showed that the dominant compound was SiO_2 (11 stations) and followed by CaO (5 stations). The lowest percentage found at the study area is K_2O (1 station).