

STUDY ON BEACH PROFILE AND SEDIMENT DISTRIBUTION
OF BIDONG ISLAND

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FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU

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**STUDY ON BEACH PROFILE AND SEDIMENT DISTRIBUTION
OF BIDONG ISLAND**

**By
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**Research Proposal submitted in partial fulfilment of
the requirements for the degree of
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**DECLARATION AND VERIFICATION REPORT
FINAL YEAR RESEARCH PROJECT**

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LIST OF ABBREVIATIONS

Abbreviation

g	-	gram
m	-	meter
mm	-	millimeter
m/s	-	meter per second
μm	-	micrometer
St.	-	station
NSD	-	Net Shore Drift

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ABSTRACT

Study on beach profile changes and sediment distribution was conducted in Bidong Island off the coast of Terengganu in the South China Sea. The study was carried out on March and July 2010 in order to determine the recent beach slope and sediment characteristics and their relationship. Sampling was done in three different stations with total 20 transects points with 50 m interval between each transect. Total station TOPCON GPT-3000 had been used to measure beach profile. Meanwhile, moment method was used to calculate the sedimentological parameters. Based on the beach profile analysis, deposition mostly appeared in the lower part of the beach where the upper parts were eroded. Also, the beach gradient for these three stations showed weak trend of changes where small differences in the value of degree of slope. Majority station I, II and III were decreasing in the value of beach slopes during the second sampling. However, for sediment characteristics, the mean values showed that the beaches were covered with medium, coarse and very coarse grains. Decreasing of mean values indicates that the grains were getting coarser. The sediment sorting for the stations were in the range of well sorted, moderately well sorted, moderately sorted and poorly sorted. Increasing values of sorting indicates that those beaches were experienced poorly sorted of sediments. Overall, the direction of Net Shore Drift (NSD) was also revealed based on the sedimentological characteristics and beach profiles where in station I the NSD direction was moving from Southeast to Northwest, in station II the NSD was moving from North to South and in station III the NSD was moving from East to West.

ABSTRAK

Kajian ke atas perubahan profil pantai dan pengedaran sedimen telah dilakukan di Pulau Bidong yang terletak di Laut China Selatan. Penyampelan telah dijalankan pada bulan Mac dan Julai 2010 untuk menentukan kecerunan pantai dan ciri-ciri sedimen serta hubungkait diantaranya. Penyampelan dilakukan di tiga stesen yang berbeza iaitu dengan jumlah 20 titik transet dengan jarak 50 m antara setiap transet. Total station TOPCON GPT-3000 telah digunakan untuk mengukur profil pantai. Kaedah Moment juga digunakan untuk mengira parameter sedimen. Berdasarkan analisis profil pantai, pengendapan banyak berlaku di bahagian bawah pantai di mana bahagian atas pantai mengalami hakisan. Kecerunan pantai pada ketiga-tiga stesen menunjukkan perubahan yang lemah dimana tiada perubahan kecerunan yang besar di antara dua-dua penyampelan tetapi nilai kecerunan menurun pada penyampelan kali kedua. Bagi ciri-ciri sedimen, nilai min menunjukkan bahawa pantai diliputi dengan butir sedang, kasar dan sangat kasar. Penurunan nilai min menunjukkan bahawa sedimen pantai menjadi semakin kasar. Peningkatan pada nilai penyusunan sedimen pula menunjukkan bahawa pantai mengalami taburan sedimen yang tidak sekata. Secara keseluruhan, arah hanyutan bersih (NSD) juga dikenalpasti berdasarkan ciri-ciri sedimen dan profil pantai di mana pergerakan arah hanyutan bersih bagi stesen I ialah dari Tenggara ke Barat Laut. Manakala bagi stesen II pula, arah hanyutan bersih bergerak dari Timur Laut ke Barat Daya dan stesen III bergerak dari Timur ke Barat.