DEVELOPMENT OF AN UNDERWATER DEPTH AND TEMPERATURE MEASURING DEVICE

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Lihat sebelah

DEVELOPMENT OF AN UNDERWATER DEPTH AND TEMPERATURE MEASURING DEVICE

By

LIM YU YAO

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JABATAN SAINS SAMUDERA
FAKULTI SAINS DAN TEKNOLOGI
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PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:
Development of an underwater depth and temperature sensor oleh Lim Yu Yao, No. Matrik: UK 5884 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda (Sains Samudera), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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Bachelor of Marine Science

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LIST OF ABBREVIATIONS

^{o}C	Degree Celsius
v	Voltage
v_i	Input voltage
v_o	Output voltage
v_r	Reference voltage
v_s	Source voltage
I	Current
Ω	Ohm
Pa	Pascal
m	Meter
DC	Direct Current
AC	Alternating Current

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ABSTRAK

Alat pengukuran elektronik digunakan untuk mengukur, memproses dan menyimpan data data kuantitatif. Pengukuran data yang tepat boleh digunakan untuk membuat model-model alam persekitaran seperti tasik dan laut. Alat pengukur yang tepat bergantung kepada data yang dimasukkan dan hipotesis/teori model. Dimana kedua-dua faktor itu bergantung kepada penyampelan data. Terdapat pelbagai jenis alat pengukuran kedalaman dan suhu bawah air di pasaran. Alat-alat sedemikian mahal dan susah dikendalikan semasa penyelenggaraan. Satu alat pengukuran dibina untuk menguji teknik-teknik pengukuran kedalaman dan suhu air. Alat pengukuran itu gagal mengukur kedalaman air dalam konsul Hyper Terminal kerana perubahan voltan output yang cepat, manakala suhu dapat diukur pada julat 10 ^{o}C to 35 ^{o}C pada ketepatan ±3 ^{o}C pada suhu bilik.

ABSTRACT

Electronic measurement instruments are used to measure, process and record the massive quantitative data. Precise quantitative data obtained through sampling could generate useful environment models of water bodies such as lake and sea. The technological ability of system control is largely based on the quality of the adopted models and the data fed into them: both the models and the data depend on measurements. A wide range of commercial instrument is available to measure underwater temperature and depth. The instruments are expensive to maintain and purchase. A simple measuring device was developed locally to test the feasibility of measuring underwater depth and temperature. Underwater depth is not measurable in the measuring device developed because of a fast varying output signal, while temperature is measurable at a range from 10 °C to 35 °C with an accuracy of ±3 °C at room temperature.