

STUDY THE MECHANICAL AND PHYSICAL PROPERTIES
OF BAMBOO FIBER REINFORCED WITH
EPOXY RESIN

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**STUDY THE MECHANICAL AND PHYSICAL PROPERTIES OF BAMBOO
FIBER REINFORCED WITH EPOXY RESIN**

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

Is this acknowledged and confirmed that research report entitled: **Study the Mechanical and Physical Properties of Bamboo Fiber Reinforced with Epoxy Resin**, Matric No. : **UK17895** was inspected and all correction that suggested was done. This report is submitted to the Department of Maritime Technology as fulfill part of the requirements obtain Bachelor Degree of Applied Science (Maritime Technology).

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ABSTRACT

Composite materials and layered structures based on natural plant fibers are increasingly regarded as an alternative to synthetic fiber reinforced parts. One of their major fields of application can be found in structural components for the marine industry. The disadvantages of this composite are lower durability, moisture absorption and lower strength properties. This study is carried out to investigate the mechanical and physical properties of epoxy resin reinforced using different percentage of bamboo fiber's composition. The effect of build orientation or arrangement parameters based on mechanical and physical testing of the process conditions on this important composite characteristic. The experiment was carried to test the composite structure using the natural fiber through various using universal testing machines and impact tester. Experiment also, compared by difference composition of natural fiber used in the specimens based of fixed ratio. The result from experiment shows that the highest percentage of bamboo fiber gives the best result for this study.

MENKKAJI SIFAT MEKANIKAL DAN FIZIKAL PADA GENTIAN BULUH YANG DIPERKUAT DENGAN EPOXY RESIN

ABSTRAK

Bahan komposit dan struktur berlapis berdasarkan fiber dari tumbuhan semakin meningkat keperluan sebagai bahan alternatif untuk bahagian-bahagian gentian kaca. Salah satu bidang yang utama penggunaannya boleh didapati dalam komponen berstruktur untuk industri marin. Contoh masalah yang terdapat pada komposit ini adalah kemuluran yang rendah, menyerap kelembapan dan kekuatan bahan yang lemah. Kajian ini adalah untuk mengkaji ciri-ciri mekanikal dan fizikal dari epoxy resin komposit gentian fiber buluh dengan menggunakan peratus komposisi yang berlainan dan mengulas kesan-kesan daripada orientasi binaan ataupun parameter susunan berdasarkan ujikaji mekanikal dan fizikal keatas kepentingan ciri-ciri komposit. Eksperimen dijalankan dengan menguji struktur komposit berasaskan fiber semulajadi melalui beberapa mesin kekuatan. Bahan ujikaji dibandingkan melalui perbezaan komposisi fiber semulajadi yang digunakan didalam specimen mengikut nisbah yang telah ditetapkan. Hasil dari kajian didapati peratusan gentian fiber buluh yang tertinggi menunjukkan keputusan yang terbaik.