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MECHANICAL PROPERTIES OF COMPOSITE PANEL FROM COCONUT HUSK, KENAF FIBER AND FIBERGLASS – AN ALTERNATIVE FOR FURNITURE MATERIAL

NOR IZZATI BINTI MOHD ALI

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TABLE OF CONTENTS

CHAPTER III

LIST OF TABLES

MECHANICAL PROPERTIES OF COMPOSITE PANEL FROM COCONUT HUSK, KENAF FIBER AND FIBERGLASS – AN ALTERNATIVE FOR FURNITURE MATERIAL

ABSTRACT

Raw material sources from agriculture sector such as kenaf fibers and coconut husks are mixed with fiberglass in the hope to produce composite panels for furniture material. The produced composite panels were studied for their mechanical properties such as bending and tensile strength conforming to the ASTM standards. The results showed that the bending strength values for the composite panel composing of kenaf fiber and fiberglass were 5916.11 MPa for MOE and 133.02 MPa for MOR. Meanwhile the tensile strength values were 11001.80 MPa and 97.32 MPa for MOE and MOR respectively. Composite panel consisting of kenaf fibers, coconut husks and fiberglass gave bending strength values of 4463.29 MPa for MOE and 86.04 MPa for MOR. The tensile strength values were 6071.53 MPa for MOE and 32.99 MPa for MOR. Finally, composite panel comprising of coconut husks and fiberglass gave bending strength values of 4247.17 MPa for MOE and 83.65 MPa for MOR and tensile strength values of 5993.12 MPa for MOE and 30.68 MPa for MOR. Such findings lead to the conclusion that agriculture source especially the kenaf fibers can serve as potential alternative composite material for the furniture industry.