

**PENGARUH FRAKSI VOLUME SERAT RAMI DAN SERAT
PINANG TERHADAP SIFAT FISIS DAN MEKANIK
KOMPOSIT HIBRID SEBAGAI BAHAN DASAR
DASHBOARD MOBIL**

SKRIPSI



**DEPARTEMEN FISIKA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS ANDALAS
PADANG**

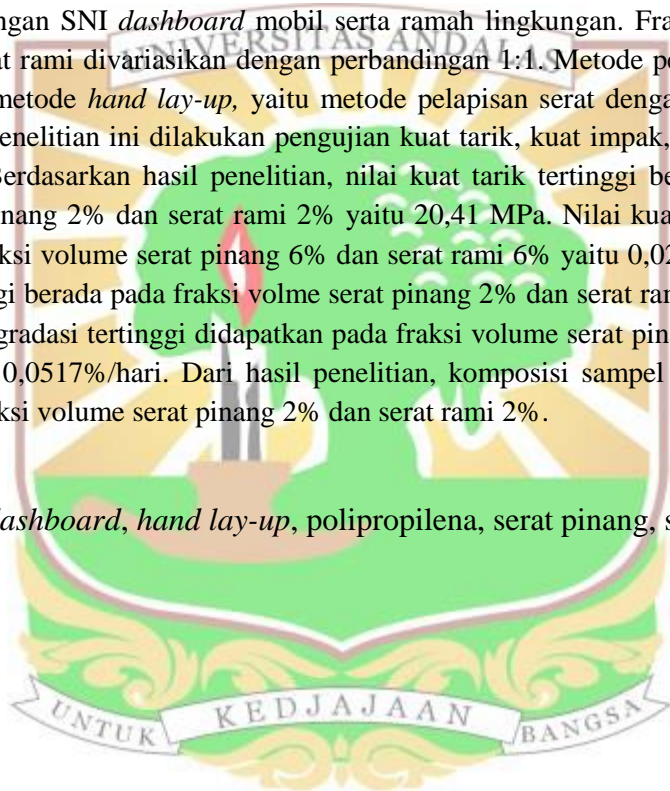
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ABSTRAK

Telah dilakukan penelitian mengenai pengaruh fraksi volume serat rami dan serat pinang terhadap sifat fisis dan mekanik komposit hibrid sebagai bahan dasar *dashboard* mobil. Penelitian ini bertujuan untuk menghasilkan komposit hibrid yang memiliki sifat mekanik yang sesuai dengan SNI *dashboard* mobil serta ramah lingkungan. Fraksi volume serat pinang dan serat rami divariasikan dengan perbandingan 1:1. Metode pembuatan sampel menggunakan metode *hand lay-up*, yaitu metode pelapisan serat dengan matriks secara manual. Pada penelitian ini dilakukan pengujian kuat tarik, kuat impak, densitas, dan uji biodegradasi. Berdasarkan hasil penelitian, nilai kuat tarik tertinggi berada pada fraksi volume serat pinang 2% dan serat rami 2% yaitu 20,41 MPa. Nilai kuat impak tertinggi berada pada fraksi volume serat pinang 6% dan serat rami 6% yaitu 0,0206 J/mm². Nilai densitas tertinggi berada pada fraksi volume serat pinang 2% dan serat rami 2% yaitu 0,88 g/cm³. Laju degradasi tertinggi didapatkan pada fraksi volume serat pinang 6% dan serat rami 6% yaitu 0,0517%/hari. Dari hasil penelitian, komposisi sampel optimum berada pada variasi fraksi volume serat pinang 2% dan serat rami 2%.

Kata kunci: *dashboard*, *hand lay-up*, polipropilena, serat pinang, serat rami



THE EFFECT OF VOLUME FRACTION OF JUTE FIBER AND ARECA NUT FIBER ON THE PHYSICAL AND MECHANICAL PROPERTIES OF HYBRID COMPOSITES AS A BASE MATERIAL FOR CAR DASHBOARDS

ABSTRACT

Research has been conducted on the effect of the volume fraction of jute fiber and areca nut fiber on the physical and mechanical properties of hybrid composites as a base material for car dashboards. This research aims to produce hybrid composites that have mechanical properties that are in accordance with the SNI of car dashboards and are environmentally friendly. The volume fraction of areca fiber and jute fiber is varied with a ratio of 1:1. The method of making samples using the hand lay-up method, which is a method of coating the fibers with the matrix manually. In this study, tensile strength, impact strength, density, and biodegradation tests were conducted. Based on the results of the study, the highest tensile strength value was at a volume fraction of 2% areca nut fiber and 2% jute fiber, namely 20.41 MPa. The highest impact strength value is in the volume fraction of 6% areca nut fiber and 6% jute fiber, which is 0.0206 J/mm². The highest density value was found in the volume fraction of 2% areca nut fiber and 2% jute fiber, namely 0.88 g/cm³. The highest degradation rate was obtained in the volume fraction of 6% areca nut fiber and 6% jute fiber, namely 0.0517%/day. From the research results, the optimum sample composition is in the variation of volume fraction of 2% areca fiber and 2% jute fiber.

Keywords: dashboard, hand lay-up, polypropylene, areca nut fiber, jute fiber

