

Karakteristik Kekuatan Tarik Dan Impak *Hybrid* Komposit Berpenguat Serbuk Kulit Buah Pinang Dan Serat Sisal (*toughness And tensile Strength*

Characteristics Of Hybrid Composites Reinforced With Areca Nut Peel Powder And Sisal Fiber)

Dicky Adi Tyagita, ST.,MT. *As chief counselor* and Andik Irawan, ST.,M.Eng *as a member counselor*

Mohammad rofiqi
Study Program of Automotive Engineering
Majoring of Engineering
Program Studi Mesin Otomotif
Jurusan Teknik

ABSTRAK

This research was conducted to determine the results of the tensile strength and impact toughness of sisal fiber and areca nut peel powder. In the manufacture of composite specimens, it consists of 2 constituent and reinforcing matrices. in the manufacture of specimens using variations (%) of resin composition, sisal fiber and betel nut peel powder where the composition includes 30%/10%/60%, 20%/20%/60% and 10%/30/60% volume fraction, followed by tensile testing and impact testing. The greatest value of the impact test is in the 1st comparison (30%: 10%:60%) with a value of 5,641 J/mm², and the smallest result is in the 3rd comparison (10%:30%:60%) which is 3,058 J/mm² This is because the mixture of areca nut peel powder is more dominant than sisal fiber, thus the larger the specimen receives the load, the greater the impact load received. Pada pengujian tarik, tegangan tertinggi diperoleh pada perbandingan ke-2 (20:60) dengan nilai: 45,275875 (N/mm²), dan untuk hasil terkecil, perbandingan ke-3 (10:30:69) dengan nilai dari: 20.41025 (N/ mm²). The greatest value is found in the second comparison because the mixture of areca nut husk powder and sisal fiber is the same, because both fibers dominate, the tensile load is also greater.

Key words : *sisal fiber and betel nut peel powder, volume fraction (%), stress-strain*