TESTING OF THE CHARACTERISTICS OF PINEAPPLE LEAF FIBER AND HOT STEMS AS SOUND AND HEAT ABSORBERS ON CAR DASHBOARDS.

By

Achmad Aufar Labib

Study Program of Automotive Engineering, Majoring of Engineering The State Polytechnic of Jember

ABSTRACT

The need for sound absorbing (noise cancellation) and thermal insulation materials is increasing along with the advances in technology and the demand for driving comfort. Noise and heat can be reduced by using environmentally friendly acoustic materials because these are obtained from agricultural waste. This study aims to determine how much influence the insulator has in restricting engine sound and heat that enter through the car dashboard which makes the passenger uncomfortable in the car cabin. The comparison of the materials used in this study is 1: 1 with the sound intensity level testing matrix of 1000, 2000, 3000, 4000 and 5000 rpm while the heat temperature uses a testing distance matrix from the car dashboard as far as 5, 10, 20, 30 and 40 cm. From the test, it was found that the noise test with 1000 rpm produces the smallest intensity level and lower heat temperature by using ramie stem fiber compared to pineapple leaf fiber, with a ratio of pineapple leaf fiber and ramie stem fiber 1: 1. In addition, the advantages of the material tested namely pineapple leaf fiber has more elastic properties. Meanwhile, the density of pores is better using pineapple leaf fiber and hemp stems with a ratio of 1: 2.

Keywords: Pineapple leaf fiber, Boehmeria nivea (ramie) stem, noise, heat, car dashboard.