

# DESIGN OF VEHICLE CABIN PROTOTYPE FROM COCONUT AND BANANA FIBERS

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## ABSTRACT

Confusion that is often encountered in the room, be it office space or cabin space, this can occur because the sound outside the room can enter the room because there are no objects that require the sound. For this reason, a silencer is needed to absorb the sound. This research was conducted with the aim to reduce the level of importance in the vehicle cabin. In this study using coconut and banana fiber fibers as sound dampening material that will be compared to the results of voice search with asphalt sound dampening. This research was conducted at the Lab. Bioscience and Lab. Jember State Polytechnic Automotive Machines from December 11, 2019 to May 2020. From the back of the sample SEM tests were carried out to determine the structure of the fiber and sound dampening. Based on the results of research in obtaining the best results, namely coconut fiber fiber with sound testing of coconut fiber fiber silencer, the sound source is given 20 Hz to 20 KHz the lowest sound that is heard in the vehicle cabin prototype with a frequency of 30.7 Hz. While the highest sound heard in the cabin prototype with a frequency of 17.3 KHz = 17,300 Hz. Coconut fiber fiber silencer has a density of 0,00074 kg / cm<sup>3</sup>. When approved, SEM coconut fiber has a good fiber structure. Coconut fiber looks soft compared to banana fiber. The SEM test also shows that the mixed latex adhesive is well mixed with coconut fiber fibers, so that the sound to be muffled is not blocked by latex adhesive.

*Keywords:* Noise, Sound Dampening, Fiber, Coconut Fiber, Banana Fiber, Vehicle Cabin