

Testing of braking distance and time as well as the wear rate of composite brake pads made from mahogany fruit skin and teak wood powder.
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ABSTRACT

Brake pads are vital components in motorcycles that play a role in reducing speed and stopping the vehicle's momentum. When the vehicle is traveling at high speeds, brake pads bear a load of 90% compared to other components. This research focuses on creating composite brake pads using waste materials from teak wood powder and mahogany fruit skin mixed with polyurethane resin and aluminum powder. The V4 brake pad specimen has the shortest braking distance and time with a distance of 3.21 meters and a time of 0.42 seconds, closely approaching the comparison brake pad specimen with a distance of 2.94 meters and a time of 0.39 seconds. For the V4 brake pad specimen, side 2 has a wear rate of 0.892×10^{-6} grams/second.mm², which is close to the comparison brake pad on side 2 with a wear rate of 1.513×10^{-6} grams/second.mm², while the V2 brake pad specimen side 1 has a wear rate of 0.853×10^{-6} grams/second.mm², which is similar to the comparison brake pad on side 1 with a wear rate of 1.746×10^{-6} grams/second.mm². The differences in the test results of braking distance and time as well as wear rate can occur due to differences in the hardness levels of each brake pad specimen. Further testing on the hardness level of brake pad specimens is necessary.

Keywords : *Brake pads, braking distance and time, wear rate, teak wood powder, mahogany fruit skin, Polyurethane.*