Hardness Test of Frictional Ability and Microstructure of Coconut Fiber Fiber and Brake Pad Aluminum Powder **Pembimbing (Aditya Wahyu Pratama, S.T, M.T)**

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The brake functions to slow down the vehicle's wheel speed and bring the wheel's movement to a stop. The loss of kinetic energy from a moving object will be converted into heat due to friction. This experimental research is conducted to determine the comparative hardness values of coconut fiber and aluminum powder composite variables in brake pad manufacturing. Subsequently, the composite brake material is tested for hardness and microstructure. The brake pads are tested using the Leeb TH120 testing instrument. The highest hardness value is found in the brake pad with a 6-gram variation, reaching a value of 514,479.19 BHN. Microstructure observation of the brake pads is conducted at 100μm magnification. The composite brake material is also tested for the coefficient of friction, with the lowest coefficient located in the 8-gram variable, having a value of 0.55.

Keywords: Brake pads, Coconut fiber, Friction coefficient.