

**TESTING ANALYSIS OF BRAKE PADS MADE FROM COCONUT FIBER AND  
COCONUT SHELL COMPOSITES ON WEAR RATE AND HARDNESS TEST**

*Supervisor (Alex Taufiqurrohman Zain, S.Si., M.T)*

*Aaron Ceta Ararya*

*Automotive Engineering Study Program, Department of Engineering*

*Jember State Polytechnic*

**ABSTRACT**

*Improving the capability of the brake lining can be done by modifying the friction material of the brake lining. One of the non-asbestos brake lining materials is made from coconut fiber (cocofibre). The shell contains materials that can be improved into environmentally friendly technology products, including as composite materials. The matrix used in this research is Polyurethane resin types A and B. In this research, the brake lining specimen C at 2 minutes has the largest average value with a value of  $4.98 \times 10^{-7}$  grams/sec.mm<sup>2</sup> which is still far from the value The manufacturer's brake lining wear rate, specimen C brake lining has the largest average value at 4 minutes with a value of  $3.34 \times 10^{-7}$  grams/sec.mm<sup>2</sup>, while at 6 minutes the largest average value of wear rate is for the specimen brake lining D with a value of  $2.90 \times 10^{-7}$  gr/s.mm<sup>2</sup>. Lining specimen D with a material percentage of 30% coconut fiber charcoal, 30% coconut shell charcoal, and 40% polyurethane resin A and B with an average hardness value of 60 HD. So, it can be concluded that the more mixture of materials and resin used, the greater the hardness value that a specimen will obtain. Hardness testing uses a shore durometer test tool.*

**Keywords:** *Cocofibre, coconut shell, polyurethane resin, wear rate, shore durometer hardness test.*