

**DESIGN OF TAPERLESS TYPE BLADES USING NACA 4412
AIRFOIL ON AWI-E1000T HORIZONTAL AXIS WIND
TURBINE**

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ABSTRACT

The current increase in energy demand is directly proportional to population growth. The limited supply of fossil resources to meet energy needs makes it necessary to use technology for the use of new and renewable energy sources. Indonesia is a country that is rich in new renewable energy sources. Until now, there are many studies that have started to look for alternative energy sources such as biomass, geothermal, hydropower, and wind. In this study, a wind turbine blade was designed and built using a NACA 4412 wind airfoil with dried mahogany wood to turn the A-Wing Wind Turbine generator. The blades used have different masses for each blade, with blade mass 1 (814.5 grams); blade-2 (822.5 grams); blade-3 (818 grams). The data retrieval process is done manually which produces a voltage value of 49.55 volts and a current value of 0.06 amperes, the value at a speed of 11.56 m/s.

Key Word: Blade, Taperless, airfoil NACA 4412.