

*“Blade Tapper Design Airfoil Clark Y made of Filamen PLA plus on Horizontal Axis Wind Turbine (HAWT)”*

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**ABSTRACT**

*Every year, Indonesia's energy requirements rise, but non-renewable energy sources like coal and fossil fuels still account for the majority of the country's energy use. To lower this number, the Indonesian government must implement a widespread shift to renewable energy. The wind power plant is one of Indonesia's renewable energy sources (PLTB). According to data, Indonesia has a 970 MW wind energy potential, and according to mapping, the average wind speed in Indonesia is 6 to 8 m/s. In this study, the filamen used within 3D printing with a Creality Ender 3 V2 will be applied to design the blades of a Clark-Y wind airfoil turbine. The blade printing results display the mass of blades 1 (102.5 grams), 2 (103.5 grams), and 3 (103.0 grams) utilized in the Lucas Noulle, which is housed in the engineering department building of Jember State Polytechnic. The blades were put to the test, including the blade performance, balance, and resistance tests. A data logger is used in the data retrieval procedure, and it shows voltage (V) and current (I) at a 2 second interval. According to the data recorder, the blade generates 4,54 volts of voltage, 0,171 amperes of current, 1.333,7 watts of wind power, and 0,776 watts of electric power at a speed of 11,56 meters per second.*

*Keyword : Filamen, airfoil Clark Y, data logger, Wind turbine*