

***Design And Manufacture Of Braking System On Horizontal Axis Wind Turbine  
With Pneumatic System. Ahmad Fahriannur, ST, MT (as chief counselor) and  
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***ABSTRACT***

*Wind energy's electric conversion is the process of kinetic energy from the wind being made to spin the turbine connected to the generator. Wind turbines have an acceptable wind speed capacity when exceeding the quality of the vessel, can cause damage to wind turbine components, braking system when wind turbine receives wind speed above capacity Turbine. Research on braking systems has been carried out one of the braking systems using selenoid with propotional control, in which research there are several aspects that can be developed such as mechanical braking system and Control is used. To get a system that has good performance as well as the development of previous research then conducted advanced research. The research aims to design and create optical tachometers and braking systems using pneumatic systems on horizontal axis wind turbines. The stages of the making of the optical tachometer are preceded by the manufacture of Rotary Ecoder, the second stage of Rotary encoder mounting and Optocoupler module on the turbine shaft, the third stage are upload the program that has been created, the fourth stage performance testing. Based on the testing that has been done known tachometer can read the maximum round of wind turbine amounting to 3000 RPM with reading error 5.53% Design and manufacture of wind turbine braking system using pneumatic system with control Propotional consists of literature studies, design of mechanical systems, electrical system designing, program designing (software), the best Propotional constants based on the tests that have been conducted is 4.2 with the value of Rise Time 21 Second, Settling Time 48 Second, Max Overshoot 2.23 volt, and Eror Steady State 0.04%.*

***Key words:*** wind, system, braking, control, pneumatic