ABSTRACT

Hicary (1108120031), Analysis on The Influence of Blade Number on Savonius Vertical Axis Wind Turbine against Voltage and Current in The Accumulator Filling Process.

Savonius wind turbine is one type of vertical axis wind turbine (VAWT) which can rotate at low speed wind conditions, have a good self-starting and capable to producing a relatively high torque. This study aims to determine the effect of the wind speed against the current and voltage generated by a savonius vertical axis wind turbine and to determine the influence of blades number changes on a savonius vertical axis wind turbine against current and voltage in the accumulator filling proses. The used methods starting from problem identification, literature studying, determine the specifications of the system, system design, data collection and processing, and the ending with the evaluation of research. This study will use savonius wind turbine based on the characteristics of the DMMM Politecnico Di Bari research. The turbine will be connected to three-phase permanent magnet alternator type. This Research will analyze the influence of blade number changes between two, three, four, five, and six blades of the turbine to the current and voltage during the accumulator filling process through the data recorded by the data logger at each use in different number of blades number. The results showed that the performance of the turbine with two blade with a mass of 1709 grams deliver maximum results to generate voltage and current of 3.003 V and 0.587 A. In the process of charging the accumulator, savonius wind turbine with two blades more recommended because it has a conversion efficiency of mechanical energy into electrical energy by 96.51%, 44.55%, 25.50% and 11:50% at a wind speed of 3, 5, 6, and 8 m/s that working on each turbine blade with a different number.

***Keywords: Savonius Wind Turbine, Blade Number, The Accumulator Filling Proses, Data* Logger.**