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Development of Savonius Vertical Windmill with Charging System

Abstract

The goal of the project is to achieve an output voltage at range 1 V until 13 V. In recent years, the use of small- scale green energy technologies has grown exponentially. This further highlights the need for innovation in this area, especially for small-scale applications. Global warming results from carbon dioxide gas accumulation in the atmosphere and the depletion of the ozone layer and carbon dioxide emissions from fossil fuels. To get the clean energy sources are not only an alternative to a finite supply of fossil fuels but also a way of helping to mitigate the harm that have been caused. Researchers around the world are looking into cheaper, renewable, and more reliable sources of energy which is wind turbine to produce kinetic energy and transformed into electrical energy. Usually the size of wind turbine was larger and heavy. Therefore, this research aims to design the Savonius vertical windmill with a charging system that displays the desired output. This research used SolidWorks software to design the blade and generator part and using Arduino software to control the charger circuit. The outcomes investigation result from Savonius vertical windmill affordable to produce output voltage of 2.33 V.

Keywords

Charging system; Renewable energy; Savonius; Vertical; Windmill