

DESIGN AND CONSTRUCTION OF A PORTABLE WIND POWER PLANT FOR CHARGING BATTERIES

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ABSTRACT

When carrying out climbing and traveling activities as a climber or traveler, cell phones, GPS, flashlights, cameras and other communication equipment have become important tools while in the open air. However, there is a need for a continuous and reliable supply of electrical power when access to conventional power sources is limited or unavailable in remote areas or when traveling long distances. Therefore, we need a tool that can be used to charge batteries to overcome this problem by using this portable wind power generator in the form of a horizontal wind turbine and has a folding system for the pole and propeller so it is easy to carry anywhere. The result of this research is a portable wind turbine that can be used to charge batteries and produces an average voltage of 5 V to 6 V and the average current obtained is 0.2 A and the average power produced is 1 W to 1.2 W at a wind speed of 4.5 m/s to 5 m/s with a minimum wind speed to drive the turbine of 2 m/s. Data that has been obtained from experiments using a fan shows that the minimum wind speed is 3.5 m/s, then the average wind speed obtained is 4.5 m/s to 5.5 m/s. The power obtained is the result of multiplying the voltage and current to produce an average power of 0.05 W to 0.9 W

Keywords: *Portable Wind Turbine, Battery Charging, Renewable Energy.*