

Master 2016

Faizan Ahsan

Micro Controller Data Acquisition on Wind Turbine.

ABSTRACT - Masterthesis

In this thesis I examined small wind turbine electrical properties such as Voltage, Current, Power and some basic properties like efficiency, rotational speed and wind velocity were measured. The small wind turbine model components were mentioned with specifications and functions in addition to description of the Arduino Program.

The model was experimented in the Hochschule Bremen Lab where testing procedures were followed. The procedure included the way how to measure the output voltages and current from the generator at different wind speed by varying distances and also varying Voltages of blower. The fruitful work resulted in drawing the Voltage-Current characteristic graph and also the Power-Voltage graph. Discussion of the obtained results were made and several factors were listed. These factors such as internal resistance of wind generator affected the models performance at higher voltages losses due to heat and alternate techniques were successfully implemented to measure the rotational speed of wind turbine and also the wind velocity using low cost sensors with the help of Arduino Microcontroller and compared the results in MATLAB environment.