

ABSTRACT

Battery is a device that stores electrical energy. Major categories are primary batteries once used cannot be recharged and secondary batteries once empty can be recharged again. Many batteries do not maintain their performance after being used and charged for particular period of time since there is damage of batteries due to over-charging of the batteries led by charging system used hence decrease the life span and the performance of the batteries. Maintaining performance and life span of the lead acid batteries need a battery charger which produces direct current at a voltage high enough to safely fill up a rechargeable battery with new electric charge.

The aim of this project was to design a battery charger for reducing damage of batteries due to over-charging of batteries using solar panel and main from Tanesco that can be used to charge Lead Acid batteries in the charging system of Pulse width modulation (PWM) having voltages from 6v-24v in a safe manner. Charging Schemes should be Getting the charge into the battery (Charging), Optimizing the charging rate (Stabilizing), Knowing when to stop (Terminating).

The objectives have been achieved; The proposed system has been undertaken successfully to accomplish main objectives. Such steps were as: literature review, data collection, data analysis as well as design of circuit, simulation results, design of prototype, testing of prototype, discussion results and report writing.

The project was designed successfully to ensure provision of quality battery charger that is used to charge batteries ranging from 6v to 24v. The project is to be beneficial to users since has got an ability of charging battery in form of pulse that provide constant current; monitoring while controlling low current of the level of battery voltage when full charged. Hence prevents damage of batteries due to over-charging.