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# SOLAR BASE AUTOMATIC STATUE SHOWER AND LIGHTING SYSTEM

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**ABSTRACT**
**Solar base water shower system is easy to install and operates solar power and pollution free electricity generation also reliable alternative which is being used in a wide spread of the ever so developing technology in the world. Also India is one of the sunniest countries in the world with 230-260sunny days every year. So generation is produced at this manner. In this project it must be made to increase the efficiency of P-V System .The running cost of our project is less because sun energy is used to running of this system. So design and simulation of p-v water shower system is done in this project. Providing clean, environmentally safe water for livestock in sufficient quantities continues and used water reused in our project is main advantage of our project additional water is not requires. A solar powered water shower system designed for remote locations was operated to determine the performance and reliability of the system and components. The system begins shower water when the solar radiation intensity exceeded. And additional lamp is provided with LDR circuit. Maximum flow was dependent on using the correct controller adjustment as well as the radiation intensity. Solar water pumping system operates on direct current as a input of dc pump**
**KEYWORDS: Solar plate, dc motor, battery, timer, lamp, solar charge control.**

## I. INTRODUCTION

The global energy today has lead to the need for more energy efficient systems. to considering that we designed the solar based statue shower and lightning system. Solar energy is an ideal form of energy with the features of being environment friendly. It is clean, non-exhaustible and available all over the world with varying intensity. Silicon is the main material used in manufacturing of solar cells. Thus, there is no problem of resource availability. The solar cells in a PV module are made from semiconductor materials. When light energy strikes the cell, electrons are knocked loose from the material's atoms. Electrical conductors attached to the positive and negative sides of the material allow the electrons to be captured in the form of a D.C. current. This electricity can then be used to power a load, such as a water pump, or it can be stored in a battery it's a simple fact that PV modules produce electricity only when the sun is shining, so some form of energy storage is necessary to operate systems at night. You can store the energy as water by pumping it into a tank while the sun is shining and distributing it by gravity when it's needed after dark. For electrical applications at night, you will need a battery to store the energy generated during the day. Battery coupled water pumping systems consist of photovoltaic (PV) panels, charge control regulator, batteries, pump controller, pressure switch and tank and DC water pump. And additionally lamp also provided with LDR kit, that means when light falls then LDR is operate and lamp will glow.

## II. EASE OF USE

### A. SYSTEM DESIGN

The system in this paper proposes consist of PIC 16F877A microcontroller. And to control the output of solar plate charge control kit is used. In this control kit 16F877A microcontroller and timer circuitry is designed. Our system

firstly the metal rod construction with attaching the plywood is mounted two times first the vertically (to build the circuitry) to construction and second will be the bottom on system horizontally (mounting the statue) .solar plate is mounted on the top of the system. In this system all the circuitry is mounted on the plywood board that is charge control circuit, LDR circuited motor pump, battery etc. shower is mounted middle of metal rod and statue is placed exactly below of shower. This length of shower rod is depending upon the as per shower water sprinkling width. And light depending resistor will be operating on a brightness of the day which is placed on board circuitry.

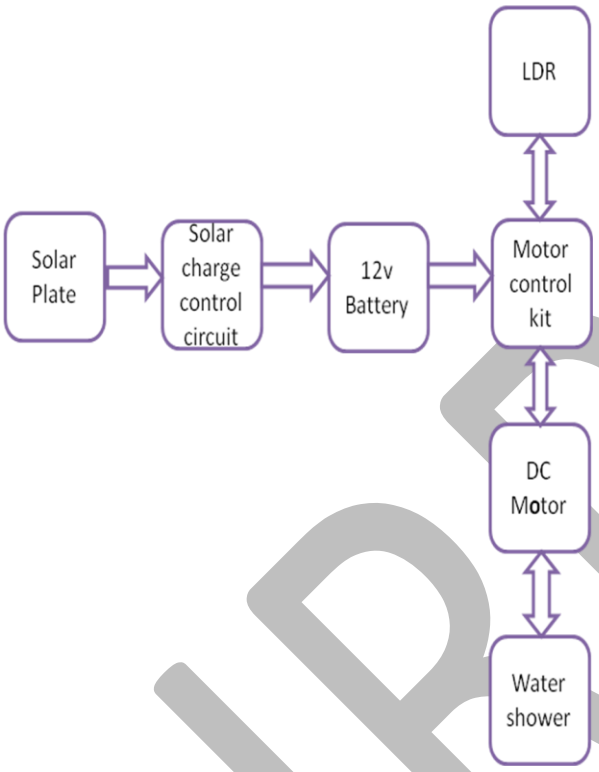


Figure1: Block diagram of overall System Design.

## B. SYSTEM OPERATION

In this project solar energy is used to sprinkling of water in the statue. The solar cell operates on the principle of the photovoltaic effect. The creation of charge carrier with in a material by the absorption of energy from the incident solar radiation. The efficiency of solar cells in converting incident solar energy into electrical energy depends on the illumination spectrum intensity this produced power is store in the battery with using charge control kit. In this charge controller PIC 16F877A microcontroller is used and timer operation also provided used in our system. Suppose we requires the only 2 hours of day shower for washing of statue, then in timer set the this time. Result of that at set time shower system automatically start the operation. And this used water is reuse in this system.

## C.CIRCUIT DIAGRAM

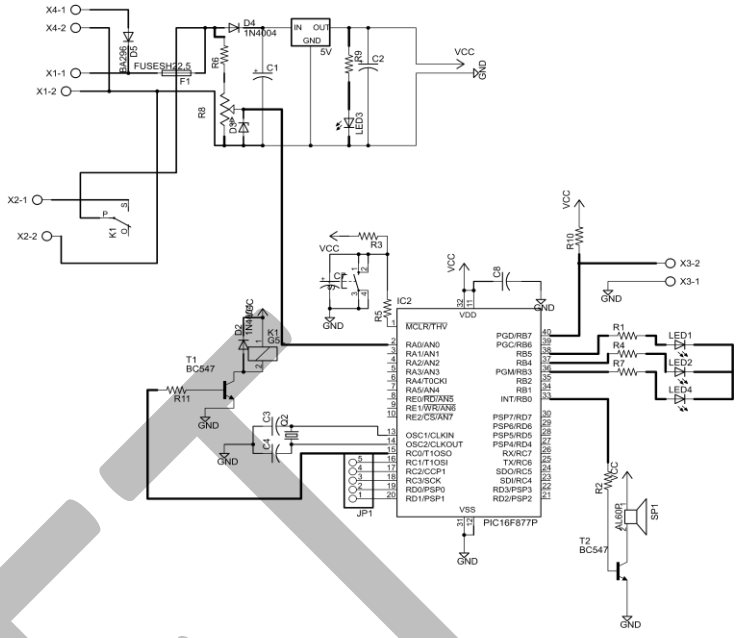


Figure2: Solar Base Automatic Statue Shower And Lighting System

## D. WORKING

In working of our system sun rays comes into the solar plate. A solar plate is device which converts the solar energy into the electrical energy. In solar plate semiconductor material is used like silicon. Because of photo voltaic action solar energy is converted into electrical energy. And this produced electrical energy is store in the battery through charge controller .In charge controller kit microcontroller is used. And for automatic timing operation timer is used. By using timer operation is timed as per required. And LDR circuit also designed in this system because of lamp. The main function of LDR circuit is with increase in brightness then resistance of LDR decreases and vice versa.LDR used for ON/OFF purpose.

## E. PIN DIAGRAM

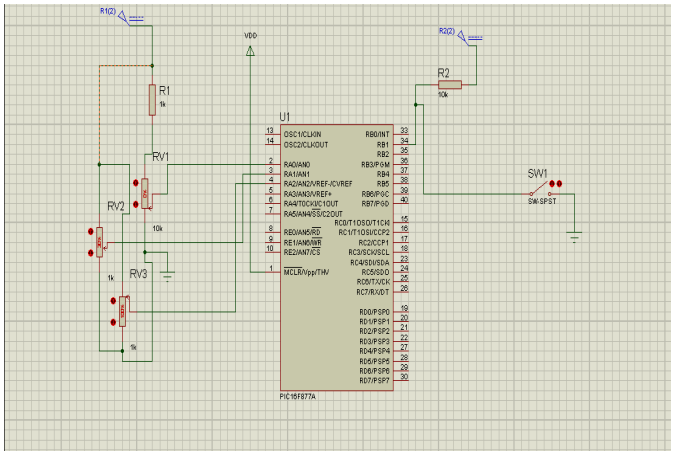


Figure3: Microcontroller interface diagrams

## RESULTS AND CONCLUSION

### RESULTS

With using solar system water can showered into the statue placed in bottom of rod. And lightning system also provided to statue lightning. This operation is timed by using timer circuit. And solar output is controlled by using charge controller kit.

Fig2: Project diagram

### CONCLUSION

Battery utilized for the purpose of storing energy. Sun is utilized for the purpose of providing energy more efficiency than the installed power. And flow rate is achieved by pump. Basic photovoltaic (PV) solar electric panel system for 12V battery charging comprises a solar panel connected to a charge controller, connected in turn to the battery. Battery is connected to dc motor and light depending resistor circuit.

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