

Smart Solar Grass Cutter

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Abstract: Now a days there are number of grass cutter techniques which are used but, smart Solar Grass cutter power by solar energy and MSEB supply. It is able to work with clean energy which is obtained from solar as well as MSEB supply. In this project solar powered automatic grass Cutter that retrieve the customer and reduce environmental and noise pollution. This design is alternate option for popular and environmentally hazards gas or petrol powered gas Cutter. The smart Solar Grass cutter is double checked first by ultrasonic sensor avoiding obstacles without need of an human being other than the Bluetooth module. The engine cut grass with the Cutter and vehicle operation control with Micro-controller that control the engine operation. The system consist of four dc motor, two BLDC motor. The four dc motor is used to drive the vehicle or robot and remaining two BLDC motor is connected to front side of the robot to cut the grass. This grass cutter will cut the grass at zigzag manner avoid all obstacles and working automatically. After cutting the grass at definite area vacuum cleaner socks the cutting grass by the use of vacuum.

Key words: Grass cutter, HCSR-04 Ultrasonic sensor, DC motor, Solar panel, Battery, Control unit, linear blades, BLDC motor, microcontroller.

1. INTRODUCTION

The first grass Cutter was made by Edwin budding in 1830, but that type of grass cutter was manually operated, while operate that type of grass cutter is somewhat difficult. Solar Grass cutter may be form of the lawn of school, colleges or stadium. This project related to grass Cutting based on solar energy or MSEB supply. This grass Cutter is design to reduce the Labor force required to cut the grass in residential, company field etc. These projects consist of four dc motor, two BLDC motor. Solar Panel and MSEB supply used for charging purpose. Two BLDC motor is placed and blade is attached to it to cut the grass, remaining four motor are provided to four wheels at grass Cutter. The battery is used to store energy which is obtained from solar panel and MSEB supply. The store energy will used to operate the project. In case solar energy is unavailable then we can goes to alternative power source that will be the MSEB supply used to charge the battery. Also there is ultrasonic sensor which is used to avoid the obstacles in the lawn and changes the direction of the wheel.

There is Bluetooth transmitter and receiver. We can use mobile such as remote by use of mobile we can move grass Cutter forward, backward, rotate the project as well as start and stop the project. The project work will be done according to the proper application based fabrication. The system will have a power source that is battery and a solar panel will be attached on the top of the robot. Moving the grass cutters with a standard motor

powered grass cutters is an inconvenience, and no one takes pleasure in it. Even though electric solar grass are environmentally friendly. The grass cutter has an advantage to store energy, reduce human efforts, reduce noise pollution and due to reduce human effort we will provide proper or accurate operation of grass cutter. This project has many advantages like it is having low maintenance cost to operate, reduce human efforts ,proper operation, easy to move one place to another place for grass cutting, also non skilled person can easily operate this grass Cutter.

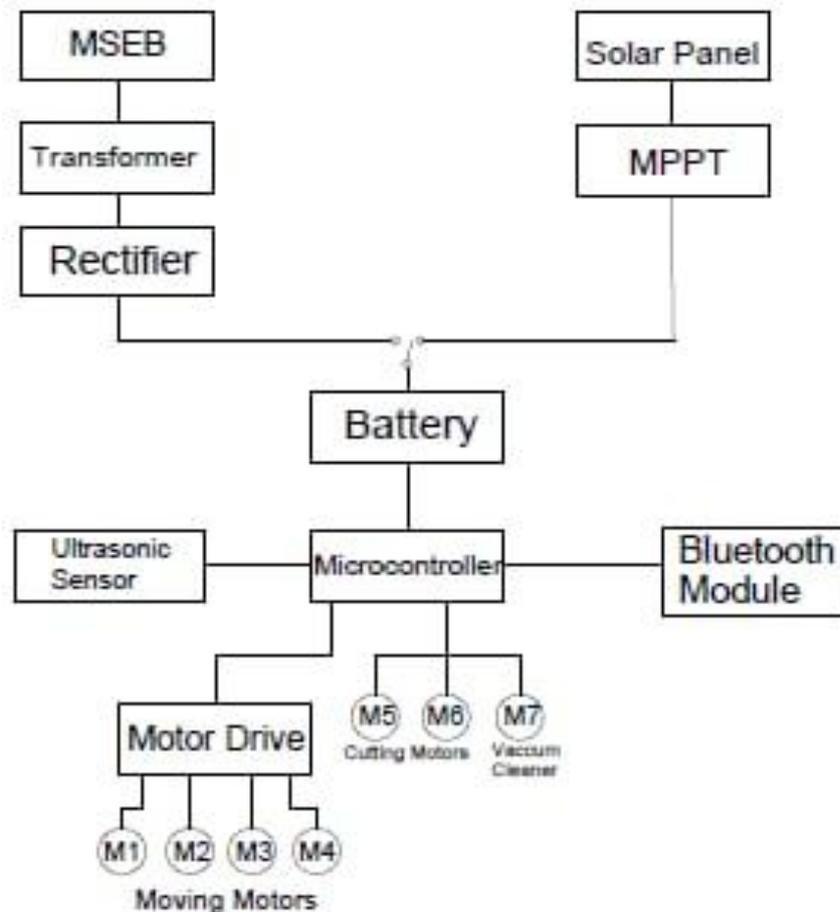


Fig.1 GENERAL BLOCK DIAGRAM

2. METHODOLOGY

Block diagram consist of following components

- a. Solar Panel
- b. Transformer
- c. Rectifier
- d. Ultrasonic Sensor
- e. Bluetooth Module
- f. Battery
- g. Micro-controller 8052
- h. Motor Drive
- i. BLDC Motor

3. RESULT

Our project a smart solar grass cutter is successfully completed and the results obtained are satisfactory. It will be easier for the unskilled person. This project is more suitable for common man as it is having much more advantages and no fuel cost no pollution and no fuel residue, less wear and tear because of less number of moving component and this can be operated by using solar energy.



4. CONCLUSION

Our project is more suitable for a common man as it is having much more advantages. This will give much more physical exercise to the people and can be easily handled. This system is having facility of charging the batteries while the solar powered grass cutter is in motion.

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