

NEW MODEL OF SOLAR POWERED GRASS CUTTER WITH ARDIUNO AND BLUETOOTH TECHNOLOGY

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Abstract: The Solar Based Bluetooth Control Grass Cutter is a robotic vehicle powered by solar energy which is controlled by the instructions applied through the bluetooth devices like mobile phones and remotes. The movement of the system is controlled by instructing the motors which are connected to the wheels of grass cutter. When the blade motor starts running then the device will cut the grass. Here we use Arduino for interfacing with motors and bluetooth module. Here we set a source code to set up the device to work as per the instructions.

Keywords: Bluetooth control, Motors, Blade, L293D Controller

1. INTRODUCTION

Now a day's grass cutting is a huge task for the people in present life style because all are busy with their life. Due to the revolution of green movement in the present scenario the industries with major campus areas are changing the percentage of greenery in the campuses and increased greenery causes increased effort and cost wages. In such cases the solar based bluetooth grass cutter proves to be a god sent. Due to consuming solar energy through solar panels cost of system is reduced and there is no use for fossil fuels so it is eco-friendly vehicle. The presence of Bluetooth module and light dependent resistors in a smaller and cheaper packaging cases to the bot to be more aware of its surroundings. Due to the presence of Arduino Uno the system cases and increases in the module that can be added. Traditional design of grass cutter had motored powered engines which require maintenance such

as engine oil and greasing. They also created a lot of noise pollution and air pollution. In the cold and harsh environment the fossil fuels and powered motors tend to freeze and not run. These problems by using electric motors they are also much greener because they use solar panels. The grass cutter uses battery chorded system cases a range as a limitation and damaged to the chords.

The grass cutter industry has not seen any disruption in product development in the recent past. The advent of electric motors and bluetooth controlled vehicles are motivated us to implement these development into grass cutter design and also human effort and time is been lost doing a job which is naturally redundant. The hard to control nature of the engine was improved upon by the simplistic performance characteristic of the electric motor. We wanted to save this human effort which could be put to better use.

2. LITERATURE STUDY

The first grass cutter was invented by Edwin Budding in 1830 just outside surrounded, in Gloucestershire, England Bedding mower was designed primarily to cut the grass on sports grounds and extensive gardens, as a superior alternative to the scythe, and was granted a British patent on August 31, 1830. Bedding's first machine was 19 inches (480 mm) wide with a frame made of wrought iron. The grass cutter was pushed from behind.

3. PROBLEM STATEMENT

As the human life running in a hurry way with their lifestyle there is no energy to maintain gardens with

their physical energy so there are many machines to clean garden but they are costly and made with fossil fuel resource based. It is harmful to environment. Due to fossil fuels combustion there is more amount of waste gases are released through the grass cutter more amount is required to install these machine.

4. MAIN COMPONENTS

- A. 12 V DC Motor
- B. L293D Controller
- C. Battery
- D. Bluetooth Module
- E. Wheels
- F. Arduino

5. WORKING

Our project proposes a robotic vehicle that can be handled remotely through Bluetooth based device. The control device is integrated with a bluetooth device that allows capturing and reading the commands. The robotic vehicle may then be operated as desired as commanded through the android application

The vehicle is integrated with Arduino board that is used to operate the vehicle as per user commands.

The controlling device may be any android based Smart phone/tab etc. having an android OS. The transmitter uses an android application required for transmitting the data. The receiver end reads these commands and interprets them into controlling the robotic vehicle. The android device sends commands to move the vehicle in forward, backward, right and left directions.

After receiving the commands the Arduino operates the motors in order to move the wheels of the robotic vehicle as per the instructions. In our project we set the coding to operate the vehicle to move while press on start button the vehicle starts and then as per instruction the robot will move to forward, backward, left side, and right side .When we press stop button it will stop running the blade motor and wheel motors.



Fig.5.1. Our Model Grass Cutting Machine

6. RESULT AND DISCUSSION

After assembling the components we tested them a several times in several places. Finally this project is suitable for smooth and dry area effectively. It is a useful for us in gardens, school or college campus grounds, industries, etc. Based on the capacity of the battery and blades the vehicle can cut the different types of grass like in fields, grounds, gardens, etc. As we using batteries to store energy this vehicle can use in night time also by storing the energy from sun light in day time.

7. CONCLUSION

In this project we use non –renewable sources of energy so total energy received from sun far exceeds our energy demand. It meant to be an alternate green option to the popular and environment hazardous gas powered lawn mower and reduces human effort.

Non skilled person also handle it easily. By using simple switches or by predetermine programming it can be easily handle and control within less time.

It is highly efficient and accurate because it detects the obstacle and changes the direction or stop functioning as per the instruction given. Therefore equipment should be protected from damage and reduces risk on human.



FIG.7.1. TOP VIEW OF MACHINE

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