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Remote Control Lawn Mower

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Abstract: This paper summarizes and reviews different technological developments for making efficient and cost effective lawn mowers. Such lawn mower may be powered by conventional electrical energy, sources may be used in combination, like solar powered robotic lawn mower. This type of lawn mover is easy to control and it reduces man power. Its control is semi automatic. In this remote is use to control the lawn mover. In this battery and PVC pipe is used. The structure of lawn mower is of PVC pipe as it is light in weight, less costly.

Keywords: - lawn mower, sensors, motor, battery, cutting blade

I. INTRODUCTION

Grass cutter machines have become very essential to our daily living in maintaining the yards. Furthermore, environmental awareness on usage of grass cutting machines has caught a great interest among consumers. As a result, consumers are searching for ways to reduce and solve their own carbon footprints. Moreover, environmental pollution keeps increasing and it can be experienced in our daily life, particularly in our homes. Based on a study, it is reported that 70% of Malaysian home citizens are utilizing fuel powered lawn mowers for their daily grass cutting routine [1]. Thus, high maintenance is needed in order to maintain a lawn mower. For instance, one should change the fuel or oil regularly so that the lawn mower works efficiently during the process of grass cutting. Furthermore, this will incur extra variable cost since the fuel price has been increased lately [2]. In order to overcome these issues, an eco-friendly lawn mower needs to be designed and fabricated in order to support the green technology initiatives. In this study, a newly designed lawn mower was fabricated which powered through a rechargeable battery. Besides that, the grass cutting machine was fabricated at low cost by taking consideration on important aspects such as lightweight, durable, and environmental friendly. Mowing the lawn with a standard motor powered lawn mower is an inconvenience, and no one takes pleasure in it. Cutting grass cannot be easily accomplished by elderly, younger, or disabled people This prototype is robotic user friendly, cost efficient, safe to use, efficient to use, and environmentally friendly. It can save significantly on labor costs. Along with the various ages of users, this lawn mower can also be used by people who have disabilities and are unable to use a regular push, or riding lawn mower

A. Proposed Design

Mowing the lawn with a standard motor powered lawn mower is an inconvenience, and no one takes pleasure in it. Cutting grass cannot be easily accomplished by elderly, younger, or disabled people. Taking into account this context we first considered a remote controlled robotic lawn mower. expected outcome for this project is the creation of a lawn mower that will cut via remote control, and then adapt that design to create a mower to operate autonomously The primary goal was to create a reliable and efficient robotic lawn mower that is not expensive to build and performs well. The purpose of this project is to alter the already built lawn mower in such a way that minimal effort will be required to perform the task of mowing grass. This incorporates designing all of the features necessary to perform all the tasks posed for this lawn mower to accomplish. Once a final design has been created to the standards agreed on by the group, parts for the mower will then have to be obtained. The final design will incorporate communication between both hardware and software components. The two main aspects of the project needed to be accomplished was the overall safety of the machine itself and the effectiveness to efficiently cut grass. The next objective was to automate the mower so that the user is taken out of the picture, and the user's only task is setting up the device initially. Another area which was considered was an idea which could be innovative and resource saving.

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B. What is lawn mower?

1) All the mowers have some what similar structure which includes a motor, rotating blade(s), moving around options and grass clippings dispenser.
2) While searching for a lawn mower, please make sure that paying a high price here wouldn't really mean higher quality results. There are other factors to consider.In early years, sheep and other animals were used to keep the lawn or yard trimmed.
3) All the mowers have some what similar structure which includes a motor, rotating blade(s), moving around options and grass clippings dispenser.
4) While searching for a lawn mower, please make sure that paying a high price here wouldn't really mean higher quality results. There are other factors to consider. The animals used to gaze the grass however in today's modern time a machine with rotating blades is used for cutting grass of lawns.
5) These machines are called lawn mowers and they can be manual (hand-operated) or motor-driven.
6) Some mower blades may be push forward and some may cut the grass to an even height with spinning of blades.
7) All the mowers have some what similar structure which includes a motor, rotating blade(s), moving around options and grass clippings dispenser.
8) While searching for a lawn mower, please make sure that paying a high price here wouldn't really mean higher quality results. There are other factors to consider.

II. METHODOLOGY

The methodology for this project is similar to the prototype analysis process. In this project we used remote control lawn mower. The methodologies of these attachments are explained in few sub- headings.

1) Components of attachment
2) Working of remote control grass cutter

A. Component of Attachment

The main components of the solar powered grass cutter are,

1) Batteries
2) Circuitry
3) Mechanism used
4) Blades
5) Tyres
6) PVC pipes

B. Working

It works on the principle of DC motor.When current from battery given to motor, motor shaft will start rotating . To the shaft two tyre is connected which also rotates. Another motor is connected to centre of the base located at lower side of the lawn mower base.from this cutting blade is connected which cut the grass with respect to cutting speed of motor.
The movement of the mower and speed of the mower may be controlled by remote

III. CONCLUSION

Robotics is very vast field which comes with different combinations of technology this will helps to reduce the human effort and gives maximum efficient output for the work, Nowadays lot of energy is wasted for mowing lawn in different areas of the world and also takes lots of human effort for the work. The main aim of this project is to make a automated robotic lawn mower system which will helps to mows the lawn in different design with lesser human effort. Advantages of this system are used components are of low cost so and in bulk production .
The auto controlled lawn mower provides the user with many benefits, and therefore could someday become a very profitable and marketable technology. However, most consumers are not aware of this advancement of the lawn mower. Each benefit of the previously designed lawn mowers and incorporating them into a new design of the mower that integrates a software and hardware for the use of a remote control. The safety features, reliability and cost efficiency, and the user friendliness of the mower designed will succeed the benefits of some other mowers that are present today

A. Application

1) For cricket ground.
2) The football ground.
3) All garden All Playground

B. Advantages

1) Compact size and portable
2) Easy to move from one place to another place
3) Operating principle is simple.
4) Non-skilled person also operate this machine

REFERENCE

[1] A.Dipin and T.K .Chandrashekhar , "Solar powered vision based robotic lawn mower," International Journal of Engineering Research and Reviews,vol. 2, pp: 53-56, April 2014 -June 2014.
[2] O. A Tanimola, P. D Diabana, and Y. O. Bankole ,"Design and development of a solar powered lawn mower," International Journal of Scientific & Engineering Research, vol. 5,June-2014.
[3] D.Satwik, N.Ramalingeswara Rao, SreeramReddy, "Design and fabrication of lever operated solar lawn mower and contact stress analysis of spur gears," International Journal of Science, Engineering and Technology Research, vol. 4, August-2015.
[4] G. Newstadt , K. Green, D. Anderson, M. Lang, Y. Morton, and J. McCollum , "Miami Redblade III: A GPS-aided Autonomous Lawnmower".
[5] P. Patil, A. Bhosale, S. Jagtap, " Design and implementation of automatic lawn cutter,"
[6] Ray Jarvis , "A tele-autonomous heavy-duty robotic lawn mower," proc.2001 Australian conference on Robotics and Automation Sydney,Nov 14-15,2001.
[7] H. Singh, J. Singh Mehta, "Design and analysis of wireless remote controlled lawn mower," SSRG International Journal of Mechanical Engineering, April 2015.
[8] S. Sujendran, P. Vanitha , "Smart Lawn Mower for Grass Trimming," IJSR ,vol 3, Issue 3, March 2014

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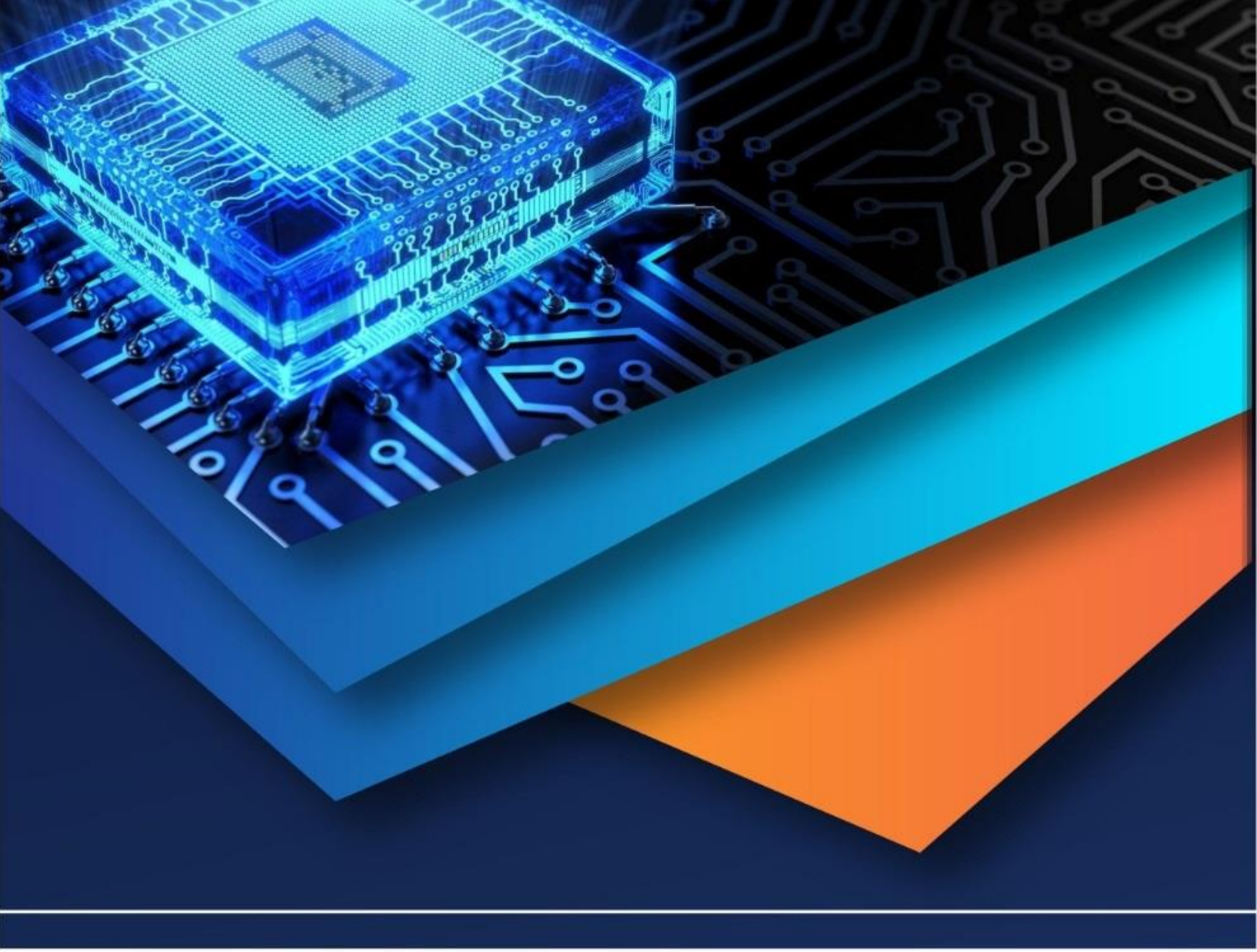

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