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SOLAR ROBOT WIPER CLEANER

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Abstract

Cleaning the floor from dust is one of the routine activities carried out every day. This activity is not only at home but also in offices or shopping centers. Sometimes due to dust cleaning activities take a long time then there are other activities that are overlooked. For this reason, we are trying to develop a smart floor cleaning robot that can navigate, clean dust, and polish floors automatically. The study was conducted using Pressman's research and development methods which included the following phases: analysis, design, implementation and testing. The robot, developed using an omniwheel wheel and is equipped with a wiper cleaner and floor polishing motor. The control system used is based on the Arduino microcontroller, the robot is also equipped with a Bluetooth communication system so that it can be controlled via. The developed robot is able to move according to navigation controls via an android smartphone. Besides this robot is also able to move to avoid obstacles if the distance between the robot and the barrier is less than 15 cm. Floor cleaning performance on various types of dirt is quite good with only leaving dirt on the floor less than 20%. The robot uses a battery that is constantly charged by a solar panel as it is drained by the motors. This provides a longer battery life when it is exposed to sun rays. The system consists of a vacuum cleaner with added ultrasonic sensor for obstacle detection.

1. INTRODUCTION

Robots are more commonly and widely used in many fields such as manufacturing, assembly and packing, transport, laboratory research, mass production of consumer and industrial goods ,etc., Robots are used to carry out many tasks that people are not interested to do because the jobs are boring, dirty or dangerous. One of the important household chores is floor cleaning which is often considered as difficult, unpleasant and boring job. Household residents hire the cleaners to do cleaning task. The hired cleaners may cause discomfort which led to the introduction of vacuum cleaner

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robot.Compact and efficient vacuum cleaner robot was developed for potential office and home use. They are very easy to use and consumes low power. It saves time and energy of humans. Vacuum cleaner robot cleans the home or office even in the absence of humans. Vacuum cleaner robot cleans minute dust particles which cannot be noticed by humans. The conventional vacuum cleaner system consists of large electrical and mechanical parts which are more expensive. It uses AC power consumption. This led to the invention of small vacuum cleaner robot. The small vacuum cleaner robot uses dc power and is of less cost. Renewable source of energy can be used for vacuum cleaner robot. Renewable source of energy is cheap and pollution free. It is a source of energy which can be used repeatedly. It can also be naturally replaced with exhaustible energy resources. Renewable sources of energy include Wind energy, Tidal energy, Geothermal energy, Solar energy, Biomass, Biogas, Hydropower etc. Solar energy is used for vacuum cleaner robots. The developed solar powered unmanned cleaning robot (SPUCR) is equipped with dry cleaning technology which helps to reduce the work of cleaners.

2. RELATED WORK

A new quite home intelligent cleaner adopted the inaudible and infrared device array, that has performed the period surroundings perception, is introduced, and this cleaner driven by step-motor has the facility of autonomous operating by itself and thus the functions of the automatic obstacle detection and obstacle shunning. This paper adopts the grid scanning formula supported electrical map notice floor coverage task, and styles synthesis detection system supported device array finding technique technology per formula characteristics, experimental results for obstacle detection by static finding indicate that the designed detection system improves cleansing and path search ability greatly. Mobile robots are commonly used in many applications, like carpet cleaning, search and rescue operation, and exploration. Many studies are dedicated to the management, sensing, and communication of robots. However, the activity of robots has not been fully addressed. This paper investigates mechanism activity for coverage tasks. Every temporal property and energy constraints are considered; the robots carry restricted energy and wish to complete the task is projected to form an alternative the traveling speeds to maximize the traveling distance beneath every energy and

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temporal property constraints. The target of this project is to develop an automatic star huntsman mechanism (STR) that is capable to trace most intensity level. The potency of the solar power conversion is often optimized by receiving most lightweight on the solar array. This mechanism is programmed to find daylight by exploitation two light-weights Dependent Resistors (LDR). Servo motor aligns the solar array to receive most lightweight. Digital compass is employed to find the position of the mechanism

3. IMPLEMENTATION

Due to the large public space, the schedule for cleaning is also very tight as there is limited time available to clean all areas using the hard floor scrubber. Furthermore, not all cleaners are able to operate the hard floor scrubber and this further limits the efficient manpower deployment of manpower.

1. It should automatically move to the designated area for cleaning and surveillance from the charging point. Thus, it should be able to take an elevator by itself. The device's location should be tracked during operation for security purpose.

2. It should ensure that the surveillance features are still functioning while making its way back to the charging point on its own when power is low.

3. The proposed solution to operate for at least 3 operation hours for every 2 hours charging duration.

4. There should an option for the device to be remotely operated.

5. QP/LEW is to certify the installation of the device is safe for the purpose of the trial. Desired Outcomes: An integrated autonomous robotic hard floor scrubber with surveillance features that is able to improve productivity and work conditions for the cleaning and security workers.

6. The device must comply with the necessary building regulation requirements.

7. Operation of the device should be efficient (e.g. cost efficient, energy efficient, manpower). Minimal human intervention should be involved in carrying out its work.

8. The device should require minimal installation and noise disturbance to the public when in operation.

We need to design an This mechanism is programmed to find daylight by exploitation two light-weights Dependent Resistors (LDR). Servo motor aligns the solar array to receive most lightweight. Digital compass is employed to find the position of the mechanism. Two changed

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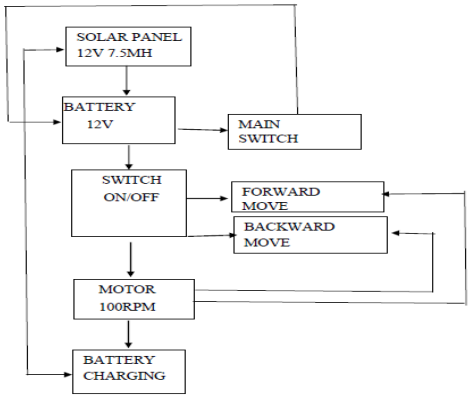
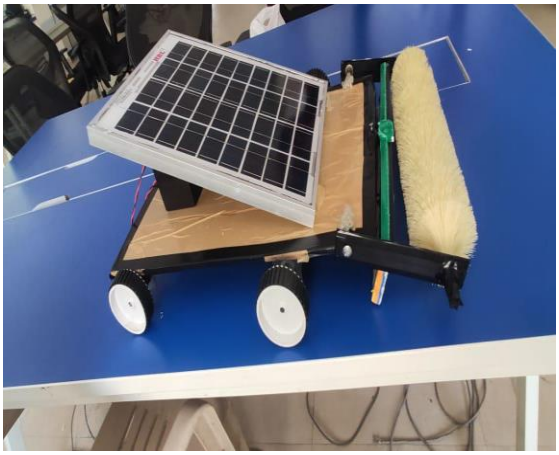
DC servo motors can move the mechanism back to the initial position once the mechanism is out of position.

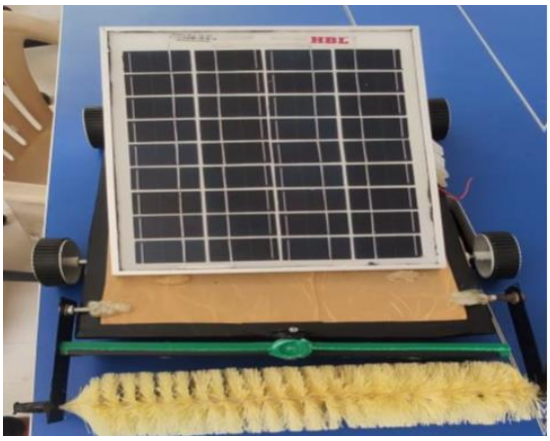


Schematic Diagram

4. EXPERIMENTAL RESULTS

The application starts working after the users login thorough their official mail-id. After the completion of registeration in the LOMO application the users request need to be accept by the admin and then they can place an order for any material. But when it comes to the vendor he need to send a request to the admin to place the products like clothes, books, pens, drafters, study materials etc. and it need be accept by the admin. After placing the order the chat is enabled between the vendor and customer and it was controlled by admin. Vendor needs to provide is or her details like mobile number, email-id, address, and identification proof. In this application we provided nearby location so that the customers can place the orders from their nearby location and can collect their orders





5. CONCLUSION

We have successfully completed the autonomous IOT based floor cleaning robot model prototype and this project presents the implementation of an Automatic cleaning System controlled by Internet of Thing, but the speed of the vehicle can be reduced automatically due to the sensing of the obstacles. It reduces the accident levels and tends to save the lives of so many people. By doing this project practically we gained the knowledge about working of automatic braking system and with this future study

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and research. We hope to develop the system into an even more advanced speed control system for automobile safety, while realizing that this certainly requires tons of work and learning, like the programming and operation of microcontrollers and the automobile structure. Hence we believe that the incorporation of all components in Automatic Braking System will maximize safety and also give such system a bigger market space and a competitive edge in the market In this project, we have checked the working of our project, we connected it with a batteries and whose cleaning and moving system is controlled by a DC gear motor and pump. We have tested the working of the system by placing various objects ahead as obstacles.

6. REFERENCE

• http://www.asp.net/learn/data-access/tutorial-16-vb.aspx

•www.gliffy.com

•7http://msdn.microsoft.com/ens/library/system.security.permissions.securitypermissionattribute(VS.71).aspx

• http://www.locmetrics.com/

•http://nces.ed.gov/nceskids/createAGraph/

•http://en.wikipedia.org/wiki/Load_testing

•http://en.wikipedia.org/wiki/Unit_test

•http://www.viveooolobject.com/savoirfaire/ecmfinance/concepts/usine/3tiers.php

•file:///C:/Documents%20and%20Settings/Owner/Desktop/jakartajmeter2.3RC3/docs/usermanua l/build-adv-web-test-plan.html

• http://en.wikipedia.org/wiki/Manual_testin