REVIEW ON SOLAR OPERATED WATER CLEANING BOAT

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ABSTRACT

India has increasing population; it devalues the cleanliness of nature. In India there are so many villages and cities with their side by lakes or river but they didn't in use. Because water is already polluted by humans. By considering these, the water is clean through' Solar Operated Water Cleaning Project' so the water should be use. For this, the project is proposed of solar operated boat for water cleaning by collecting garbage is based on wireless communication use in river or lake. The present garbage collection problem will configure in concept of smart cities as well as in villages. The intension of this project to make water clean from garbage. This project is using the solar energy and boat will operate automatically so it saves man the power. Power is supplied from PVC (photovoltaic cell) to the boat is 12V 7.3AH. The garbage will collect through conveyor belt. To maintain the cleanliness of India this project gives little contribution towards "Swachh Bharat Abhiyan" scheme by PM of India.

Keyword:- *Photovoltaic cell(PVC) , Wireless communication , Garbage collecting boat , Solar energy , Lake or River water , Conveyor , Automatic , Smart city .*

1. INTRODUCTION

Water is the most precious resource for the humans as well for the animals. Water is a finite and unprotected natural resource. The use of water affects the quality of this resource itself and the nature in a broader sense. Sea, river and lake water is valuable for the environment, irrigation and drinking. It is fundamental to protect and fairly use the water. It is important to manage the supply and disposal of water wisely holding that clean water continues to be available to future generations at a moderate cost. This effect of plastic to human body is cause which is done by human itself. Humans are normally throw the plastic of any wafers which first they eat and the wrapper they throw into the water. Likewise plastic bottles are also thrown by human after their use.It may eaten by marine animals which may cause their life harm and the marine animals when eaten by humans it also cause to human body. To stop the danger of garbage thrown to water, we propose the robot ship which will help to collect the garbage from water and make water harmless and clean. The ship will totally work on solar power which is totally free energy. The ship will not need any other form energy so that it save money .In day time ship will store the energy and at night time ship will start working and collect garbage. In this way we support the Swachh Bharat Abhiyan and serve the nation to make make water free from harm as well as cleanliness will maintain.

2. LITERATURE SURVEY

- Sirichai watanasophon and sarinee onitrakul, ***"Garbage collection robot on the beach using wireless communication"***, international conference on informatics, environment, energy & application IPCBEE ; DOI IO 7763/CBEE 2014 V66.19
- This article presents garbage collection robot on the beach using wireless communication. The robot is built on the caterpillar wheels, sizes 52x74x17cm and the power is supplied from 12v 30Ah battery which is connected to

40w solar cells. The user can control a robot via a program developed from visual basic 2005 application based on window xp. The command from user is sent via Bluetooth to PICI8F4550 for processing.

- In addition it is also equipped with an IP camera with added pan/tilt capabilities which relay feedback information to the human operator via Ad-hoc system. The result of robot performances were found that the robot can move with an average speed 0.5meters per second on the sand via wireless communication and collect the garbage with side 12.5 x 49cm for example: glass bottles and plastic, etc

3. BLOCK DIAGRAM

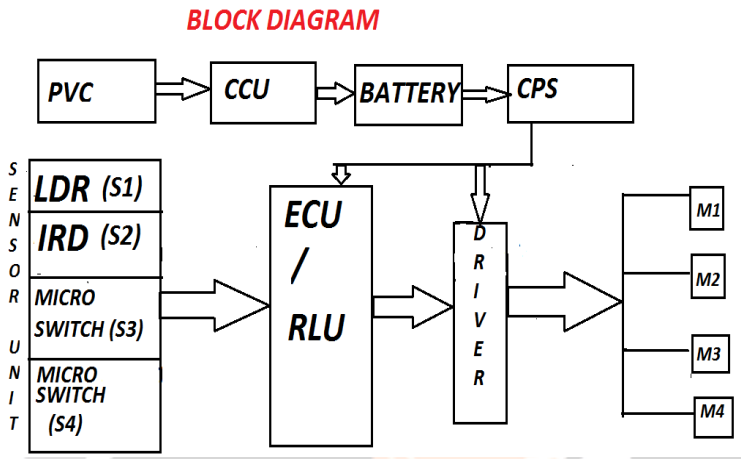


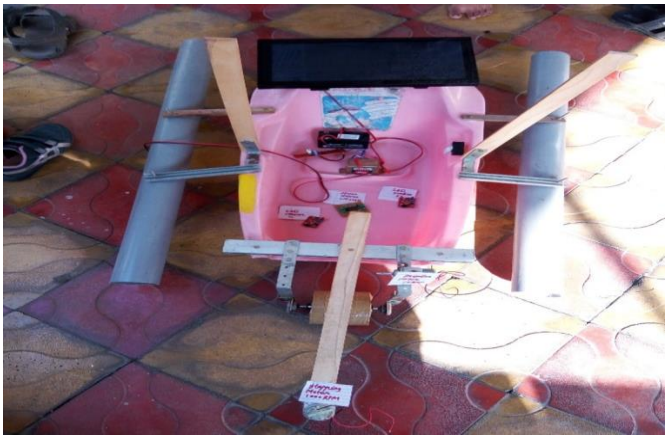
Fig –Basic schematic diagram of solar operated water cleaning boat.

4. RELATED WORK

The above basic block diagram of solar operated water cleaning boat it totally work on solar energy .this solar energy is collected through the PVC (Photo voltaic cell). The rating of PVC is 12V and 7.3AH then the energy pass through CCU (charge control unit). In between PVC and CCU there is a diode connected so power will only flow in one direction from PVC to CCU. Then this power is stored in Battery which is the rating of 12V and 2amp. This stored power is supplied to CPS (control power supply).This controlled power is provided to ECU (electronic charge unit) or RLU (relay logical unit).

This unit connects the sensor unit and driver circuit. In sensor unit there are four sensors LDR (light dependant resistor) this sensor connects to the PVC for the direction of sun.IRD (infrared detector) sensor is used for the collecting garbage from water. Micro switch S3 sensor is used for them to sence the garbage and collects it. Micro switch S4 is used to limit stop the motor. Driver circuit is used to control all motor. Motor M1 is used for the direction of motor. Motor M2 is used the forward reverse of motor. Motor M3 is used conveyer to catch the garbage. Motor M4 is used for the flapping purpose. The rating of all the four motors is 12v DC.

5. PROJECT MODEL



6. FUTURE SCOPE

- It can be operated with camera to take long distance cleaning for ocean or sea.
- Recycling of garbage or waste which is collected by robot ship for the generation of electricity.
- If we connect transmitter and receiver circuit then this boat is not going on other countries.

7. CONCLUSION

This project develops the robot for collecting the garbage in the lake, river, and pond etc.Wireless communication was applied to the robot for remote controlling. The project performed by us made an excellent task in the environmental purpose. An inventory method to reducing manpower and so conveniently stabilizing the garbage collection boat.

8. REFERENCES

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