GARBAGE COLLECTION FROM SURFACE WATER OF RIVER

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***Abstract*: In this project the proposal concept is to reduce the human effort in garbage cleaning in seaways by automated system. Now a days even though automation plays an important role in all industrial areas in the proper dumping of waste material from industrial and domestic areas are still challenging task and faces many problems to doing the task. To reduce this problem and to save the human life and human effort we design mechanism "Garbage Collection from Surface Water of River". We design our project to use this in effective way to control the collecting wastages and with and with the cleaning of gaseous substances and the process of garbage cleaning and it also reduce spreading of diseases to human being.**

***Keywords*: Solar Panel, Motors, Conveyor Belt, Wheels**

1. INTRODUCTION:

The "Garbage Collection from Surface Water of River Using Solar Panel" used in that places where there is waste debris in the water body which are to be removed. This machine consist of different size of Fins in which garbage's are going to collect in between them. This also reduce the difficulties which we face when collection of debris take place. In this machine one end of fins is fixed and another side is movable, with the help of servo motors we lift the fins from movable side. All the waste debris are get collected at tank placed at the end of boat. This will ultimately result in reduction of water pollution and lastly the aquatic animal's death to these problems will be reduced. The use of this project will be made in rivers, ponds, lakes and other water bodies for to clean the surface water debris from bodies.

2. MOTIVATION & OBJECTIVES:

The problem of water logging due to plastic, thermocole and metal leads to pest growth and it favours diseases like malaria, typhoid etc. This is unsafe for human life and hence the idea of this project emerged. The objective of the proposed project is to design and fabricate an automated machine for drainage cleaning in order to prevent humans from getting affected by various diseases from the infectious microbes present in the sewage while cleaning manually. This proposed system is to minimize or overcome the problem faced while using man operated machine and to minimize the increased dumping rate of waste.

2. LITERATURE SURVEY:

1] M. Mohamed Idhris, M. Elamparthi, C. Manoj Kumar Dr.N. Nithyavathy, Mr. K. Suganeswaran, Mr. S. Arun kumar, Design and Fabrication of Remote Controlled Sewage Cleaning Machine [1] the motive of the project is to automate the sewage cleaning process in drainage, to reduce the spreading of diseases to human. The black water cleaning process helps to prevent pest infestations by reducing the residues that can attract and support pests. It also improves the shelf life and sensory quality of food products. In the proposed system, the machine is operated with remote control to clean the sewage. Hence, this system avoids the impacts from the sewage waste and its harmful gases. This helps to prevent the mosquito generation from the wastage.

2] Mr. Abhijeet. M. Ballade, Mr. Vishal S. Garde, Mr. Akash. S. Lahane and Mr.Pranav V. Boob Design & Fabrication of river cleaning system [2] India is holy country & during lots of festival like Ganesh visarjan, navratri durga puja & mainly Siahnsth kumbhmela there is lots of water pollution of Godavari River at Nashik. The water pollution is very important problem in rivers, ponds and water bodies near Godavari River at Nashik.

3 SOFTWARE AND HARDWARE REQUIRMENT

3.1 IR Sensor:

An infrared sensor is an electronic device that emits in order to sense some aspects of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. These types of sensors measures only infrared radiation, rather than emitting it that is called as a passive IR sensor.

3.2 DC Motor:

A DC motor is any of a class of rotary electrical machines that converts direct current electrical energy into mechanical energy. The most common types rely on the forces produced by magnetic fields. Nearly all types of DC motors have some internal mechanism, either electromechanical or electronic, to periodically change the direction of current flow in part of the motor.

A DC motor is not the same as a "gear motor" - a "gear motor" may be an AC or DC motor coupled with a gearbox or transmission. A gear motor adds mechanical gears to alter the speed/torque of the motor for an application. Usually such an addition is to reduce speed and increase torque.

3.3 Solar Panel:

When photons hit a solar cell, they knock electrons loose from their atoms. If conductors are attached to the positive and negative sides of a cell, it forms an electrical circuit. When electrons flow through such a circuit, they generate electricity. Multiple cells make up a solar panel, and multiple panels (modules) can be wired together to form a solar array. The more panels you can deploy, the more energy you can expect to generate. Solar panels generate direct current (DC) electricity. A single solar module can produce only a limited amount of power; most installations contain multiple modules. Each module is rated by its DC output power under standard test conditions.

3.4 Conveyor Belt:

In the process or manufacturing industry, raw materials and products need to be transported from one manufacturing stage to another. Material handling equipment are designed such that they facilitate easy, cheap, fast and safe loading and unloading with least human interference.

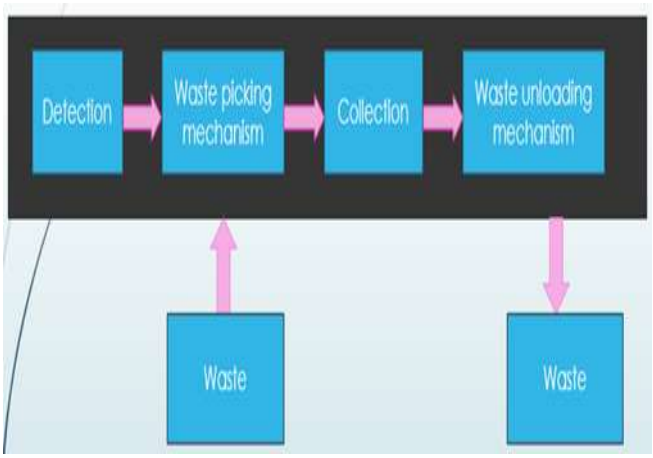
Conveyor system can be employed for easy handling of materials beyond human capacity in terms of weight and height. Light fabric conveyor belts are, according to the International Standard ISO 21183-1 “Light conveyor belts”. Principal characteristics and applications, predominantly used for collecting the garbage in the box type structure in the boat. Fabric conveyor belts are made of various layers, where the tensile strength is provided by synthetic fabric plies. In light fabric conveyor belts, the fabric is usually made of polyester, in some cases of polyamide or aramid.

3.5 Bluetooth Module:

HC-05 module is an easy to use Bluetooth SPP (Serial Port Protocol) module,designed fortransparent wireless serial connection setup.Serial port Bluetooth module is fully qualified Bluetooth V2.0+EDR (EnhancedData Rate) 3Mbps Modulation with complete 2.4GHz radio transceiver andbaseband. It uses CSR Bluecore 04-External single chip Bluetooth system withCMOS technology and with AFH (Adaptive Frequency Hopping Feature).

4. SYSTEM STRUCTURE

4.1 Basic Block Diagram



We are collecting garbage from the surface of the water using garbage collector that we are designing. We are using solar panel for charging the battery. Using this we drive our boat. And using conveyor belt we are collecting garbage from the surface water and this garbage is collected in the collector and using level detection sensor we know the level of the garbage in the collector.

5. RESULT & DISCUSSION:

Our project collects the garbage which is floating on the river water**.** It can be controlled using Bluetooth.


Fig: Hardware Implementation

6. Conclusion:

This innovation is easy and less costly and has lots of more future scope. This project "Garbage Collection from Surface Water of River" is designed with the hope that it is very much helpful to river cleaning. On the basis of it design and estimating cost and availability it is very cheap and very useful for the society. On the basis of these result we can conclude that it is an innovative method of minimizing manual stress and thus very much reliably stabilizing the in the river. The project carried out by us made an impressing task in the environmental purpose and it is very useful for the small scale works. Although this system able to collect the garbage from the river with human interaction. The objective of the project was successfully achieved.

7. ACKNOWLEDGEMENT:

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REFERENCES

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