Review on River Cleaning Machine

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Abstract- In this paper we have studied about the river cleaning machine. The main aim of the machine is to reduce the man power, time consumption for cleaning the river. Nowadays almost all the manufacturing process is being atomized in order to deliver the products at a faster rate. In this paper we have emphasize on the operation of river cleaning with help of a motor and chain drive arrangement. RF transmitter and receiver can be used to control the cleaning machine. This arrangement consists of motor, chain drive, propeller, PVC pipe, RF transmitter and receiver and collecting tank. Automation can be achieved through computers, hydraulics, pneumatics, robotics, etc., of these sources, pneumatics form an attractive medium for low cost automation.

Keywords- Motor, chain drive, propeller.

I. INTRODUCTION

River pollution in India has now reached a critical point. Almost every river system in India is now polluted to a great extent. As assessed by the scientists of the National Environmental Engineering Research Institute (NEERI), Nagpur, nearly 70 per cent of river water in India is polluted. India has five major river systems, namely, the Ganga, the Brahmaputra and Indus river systems in north, and the peninsular, east coast and the west coast river systems in the south. According to recent estimates by the Central Pollution Control Board (CPCB), faecal coliform levels in the mainstream of the river – some 2,500 kilometres from Gangotri to Diamond Harbour – remain above the acceptable level in all stretches, other than its upper reaches.

Even in the highly oxygenated upper stretches, faecal coliform levels, though within acceptable levels, are increasing in places like Rudraprayag and Devprayag, suggesting inadequate flow for dilution.hydro-magnetic system, the first of its kind, was made by the scientists at Omni Enviro and installed in the Sochi River near the Black Sea in western Russia. This system is a hydro-technical structure installed in the river and is described as "a running/flowing type" of magnetic water treatment plant. Within a few hours of the hydro-magnetic system's operation in the Sochi River, the scientists, as well as thousands of other people who had come to see this experiment, witnessed unique changes. Automation plays an important role in mass production. Nowadays almost all the manufacturing process is being atomized in order to deliver the products at a faster rate. In this paper we have studied how to control the cleaning machined using RF transmitter and receiver. Automation can be achieved through computers, hydraulics, pneumatics, robotics, etc., of these sources, pneumatics form an attractive medium for low cost automation.

The manufacturing operation is being automated for the following reasons.
1. To reduce man power
2. To reduce the work load
3. To reduce the production time
4. To reduce the fatigue of workers.

II. LITERATURE REVIEW

[1] NDUBUISI C. Daniels

The Drainage system cleaner is a machine which helps to protect the environment from different kinds of environmental hazards through the promotion waste management by the removal of garbage from the drainage system. These wastes when not removed end up settling in residential places where these wastes are burnt thereby causing climate change otherwise these wastes block the drainage systems thereby causing flooding. The machine is designed in such a way that it generates motion for its functions by itself through the action of running water thereby cutting out the dangers of the powering the machine by other sources of power because of the harshness of the rain on these other sources. The drainage system cleaner has three major parts which are the Propeller, the Cleaner and the Pan all make up for its effective functioning. The Drainage system cleaner was tested on three different days in the first day it rained in the months of September, October and November 2012 respectively. Based on the findings made after the test the Drainage system functioned well when there is maximum load. I therefore recommend the use of this system by various individuals, government companies and Waste recycling companies for prevention of environmental hazards and also encouraging waste management.

[2] Osiany Nurlansa, Dewi Anisa Istiqomah, and Mahendra Astu Sanggha Pawitra.

This research aims to design and make AGATOR (Automatic Garbage Collector), a rotor robot model as automatic garbage collector to counter accumulation of garbage in the river which has no flow effectively and efficiently. The method of implementation is design and construction. This method includes the identification of needs, analysis of the components required specifically, hardware and software engineering, developing, and testing. The test results obtain data by specification of AGATOR includes IC ATMega16 with 5 Volt voltage and 1,1 m Ampere current, IC Driver with 12 Volt voltage and 1,2 Ampere current, and Limit switch as the controller. Support devices of the robot are mechanical robot, robot control system, sensor system, and actuator robot. The maximum load drives the garbage receptacle until 5 kg. The average speed of robot when take out the garbage is 0,26 m/s.

[3] Emaad Mohamed H. Zahugi, Mohamed M. Shanta and T. V. Prasad

The researchers and oil companies are trying to take so precaution for the problem of oil spill in sea, river or on ground etc. A lot of work concerned by removing the oil from water, there were many advanced tools for this task This paper presents a multi-robot system that works on the surface of water to help cleaning up marine oil spills using a skimmer as a collecting tool, the aim of this multi-robot system is to surround the oil spill in certain position for fast and easy cleaning and prevent it from spreading wider.

[4] Uman Khalid, Muhammad Faizan Baloch, Haseeb Haider, Muhammad Usman Sardar,Muhammad Faisal Khan, Abdul Basit Zia and Tahseen Amin Khan Qasuria.

With the advancement of technology, robots are getting more attention of researchers to make life of mankind comfortable. This paper presents the design, development and fabrication of prototype Smart Floor Cleaning Robot (CLEAR) using IEEE Standard 1621 (IEEE Standard for User Interface Elements in Power Control of Electronic Devices employed in Office/Consumer Environments). Subject robot operates in autonomous mode as well as in manual mode along with additional features like scheduling for specific time and bagless dirt container with auto-dirt disposal mechanism. This work can be very useful in improving life style of mankind.

[5] Huang Cheng, Zhang Zhi*

The Liangtan River basin is shared by Jiulongpo, Shapingba and Beibei district in Chongqing, China. The Liangtan River pilot project comprised identification of key pollution sources leading the Liangtan River basin pollution and the most efficient projects and technology for improving water quality in rapid urbanized area using the MIKE 11 modeling system. Ammonia-N (NH4 -N) and chemical oxygen demand (COD) were found to be most illustrative representing nutrient load from municipal and diffuse rural sources and industrial sources, respectively. The scenario modelling for 2015 shows that in terms of improving the water quality, the different sectors should be addressed in the following order: Urban wastewater, industrial pollution load, rural wastewater, livestock pollution load, domestic solid waste and fertilizer pollution load. The largest improvements to water quality by 2015 can be achieved by enhancing municipal wastewater treatment to meet higher wastewater discharge standards for nutrients and by supporting investment in clean technology at the 50 largest industrial enterprises.

[6] T. Izdebski, M. Dors, and J. Mizeraczyk

River water cleaning from microorganisms using Electro hydraulic discharges and ozonation was investigated. The processed water was highly polluted with the total number of microorganisms (70 400 cfu/mL) and total Escherichia coli bacteria (280 cfu/mL). The processing was conducted in a tube reactor with a hollow needle-rod electrode configuration. A 400-mL sample of river water was treated at different flow rates. Ozonation was performed in a washing bottle with an ozone concentration of 20 g/m3. The corona discharge treatment showed a steady decrease of bacteria and microorganisms but did not kill them completely. Spark discharge killed the bacteria and microorganisms completely; however, its energy efficiency was much lower than that of ozonation. The ozone treatment decreased the concentration of microorganisms and coli bacteria down to 785 and 10 cfu/mL, respectively, in 45 s which resulted in higher energy efficiency than processing using corona and spark discharges. The NPOC analysis of the treated samples showed its concentration of 5 ± 0, 4 ppm in all samples.

III. SCOPE OF PROBLEM

Many large rivers are closely associated with Indian culture and heritage. The pollution situation in our country is worse than that of some of the industrialized countries of Europe and America. These problems comparatively less or more in volume, cause serious menace to aquatic environment and biotic communities including fish and ultimately affect man through the food chain.

Recent WHO data show that about 21 per cent of all communicable diseases in India are water-borne diseases. Epidemiological studies have shown that diarrhea and

intestinal worm infections account for an estimated 10 per cent of the total burden of disease. According to a report of the Central Pollution Control Board, despite river Ganga's considerable resilience as a self-purifying and fast-flowing river, its organic pollution load is significantly high.

IV. REASON FOR SELECTING

After understanding the current situation it can be taken into consideration of my interest to look forward to work in future to:-

To save aquatic life
To increase cleanliness
To contribute toward automation
To reduce human effort

Every human being has certain needs/priorities towards which he directs his efforts in order to fulfill them. India is an emerging economy (at least our politicians say so) with highest growth rate at the moment ironically amidst all these shining glories quality of life of an average Indian is way below than even some lesser know economies. self-purifying and fast-flowing river, its organic pollution load is significantly high.

V. CONCLUSION

In this paper we have reviewed papers of different authors and seen that the river cleaning machine is of great need in future as per the present scenario. The emphasis is given on the operation of river cleaning with help of a motor and chain drive arrangement. RF transmitter and receiver can be used to control the cleaning machine. Also automation plays an important role in mass production. So, designing such river cleaning machine will be very much economical and helpful to rivers and ponds cleaning.

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