A New Approach of Tank Cleaning Robot

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Abstract--- *In today's world to clean a storage tank is quite very tiresome. Every work has to be done manually. Due to the great height work may be very risky. Hence there is a need to use a robot for cleaning purpose. Here we tried to develop a system where the robot can control remotely by the user. The paper presented is basically a survey made on underwater robot.*

Keywords--- Cleaning Robot, LPT Port, Time Efficiency.

I. INTRODUCTION

Due to the development in the infrastructure (housing Colony, Villa, bungalow) in past few decades the number of storage tank, pools have been increase with them in country like India. Hence there is a need to maintain this water tanks, since water is an important factor to human we have to ensure that it is clean and free from all impurities.

Manual cleaning is quite tiresome and hectic; hence we have tried to develop a system where the robot can control remotely by the user.

II. PROPOSED SURVEY

Existing model

Currently there is no such system that can manage and clean the water tank. Everything has to be done manually and consider being tiresome, hectic, risky task. And working in such impure tank manually can cause health issue.

III. PROPOSED SYSTEM

We tried to developed a system in which a user can navigate and control various operations using various key point from keyboard which is send in wireless way to initiate relay and in turn switch on the motor in corresponding direction and a camera is mounted over so the user can view it.

Due to the use of robotic system it may help in-

- Time efficiency
- No human intervention
- Can remotely be controlled
- Reduce life risk

IV. COMPONENTS

Devices used are

- LPT port
- BC547 transistor

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- FSK modulation
- Encoder
- Camera

LPT port

Short for Line Printer Terminal, LPT is used by IBM compatible computers as identification for the parallel port, such as LPT1, LPT2, or LPT3. The LPT port is commonly required when installing a printer on an IBM compatible computer. The majority of all computers utilize LPT1 and do not have an option for another LPT port unless additional ports are added to the computer.

BC547 transistor

BC547 is an NPN bi-polar junction transistor. A transistor, stands for transfer of resistance, is commonly used to amplify current. A small current at its base controls a larger current at collector & emitter terminals.

BC547 is mainly used for amplification and switching purposes. It has a maximum current gain of 800. Its equivalent transistors are BC548 and BC549.

FSK Modulation

Frequency-shift keying (FSK) is the frequency modulation system in which digital information is transmitted through the discrete frequency change of a carrier wave. The technology is used in communication systems such as amateur radio, caller ID, and urgent situation broadcasts. The simplest FSK is binary FSK (BFSK). BFSK uses a pair of discrete frequencies to transmit binary (0s and 1s) information. With this scheme, the "1" is called the mark frequency and the "0" is called the space frequency.

Encoder

An encoder is adevice, circuit, transducer, software program, algorithm or person that converts information from one format or code to another, for the purposes of standardization, speed or compressions.

Camera

A camera will be mounted over the robot which is used to check the impurities and it is interfaced such that everything can be view on the computer.

V. ALGORITHM

For navigation
- Start
- Check for the parameter through sensor.
- Parameter is feed to transistor where ADC takes place.
- Processor process parameters.
- At the parallel way accelerometer input is given to MC.
- If impurities are founded then processed parameter exceed their limit to present coordinates
- Exit

For brushing
- Start
- Check for impurities through camera that is mounted over the robot

- If impurity founded then operate brushing
- Stop

For flushing

- Start
- Check for brushing operation to be completed
- When user press the key turn on suction motor to suck impure water and drained out it efficiently.
- Stop

VI. CONCLUSION

We have tried to implement a new idea for underwater cleaning robot which will clean water tank without any human intervention.

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