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Cash Back by Plastic Based Recycling Machine

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ABSTRACT

Aiming at the problem of on-site plastic bottles recycling & reuse of waste, the system is supposed to be developed on the basis of "ATMEGA328P",as a main controller,"ATMEGA328P",not only control the mechanical system of the collection to recover & collect plastics bottles but also communicates with rewards / cash back system through wireless / GSM Sim800 network.

The experimental proto type tests result shows post used bottles of plastic & other plastic of any thickness to be collected in the setup , which are also convenient to the consumer for getting the reward code / cash back by entering the users "Mobile No" , further this code will be transfer to the users mobile no with the help of SMS.

The collection of plastic bottles is mainly leads to reduce the pollution which is occurring due to the plastic material as it is the " non degradable ", material harmful to soil fertility & also water drains & choke the pipe lines , choking is one of the major issue which is caused by drainage of plastic.

In this way the model " cash back by plastic waste " is beneficial to the society .Overall attracting towards the interesting rewards / promo codes the people will encouraged by this that not be waste his / her waste , & generate proper benefit by this waste .

This collected scrap plastic will be further transfer for the recycling process , by which new products of plastics may be manufactured by the tie up company .In this way the plastic recycling chain will be going on continue without harming to the Environmental health.

Keywords : ATmega328p ,GSM module , maicrocontroller , sensor.

I. INTRODUCTION

This project is about to collect all the harmful one time use plastic which was supposed to be dump at dumping yard by the people, instead of that our project is giving reward to the user who will drop the plastic bottle and other thickness of plastic in the machine. Overall our aim is to collect all the plastic by this way to attract people to use this machine, which will lead to reduce plastic dumping waste and to reduce chemical explosion and further authority will recycling it and new life for plastic will be there.

Plastic recycling process machine is already present in market, so our main focus on the things that how we attract the attention of maximum people toward the machine so that maximum people use this machine to make our country free from pollution caused from plastic which is the maximum problem of today's life. People have environmental conscious will throw waste plastic bottles into trash, otherwise throw away, thus caused environmental pollution. Therefore, in order to reduce plastic bottles environmental pollution, encourage peoples to make good use of renewable resource, and for the benefit of society.

Therefore, in order to reduce environmental pollution, renewable resources usage, and development of dedicated intelligent recovery is necessary. This project uses ATmega16 embedded controllers, sensors and other electrical components to control the collector mechanical system for collecting the plastic bottles; certain incentives were given to peoples as a reward also submitted via wireless network. Recycling box developed reduces the environmental pollution caused by plastic bottles, encourages people to recycle plastic bottles, this will play an active role for construction of conservation oriented society.

II. ESE of use

Block Diagram

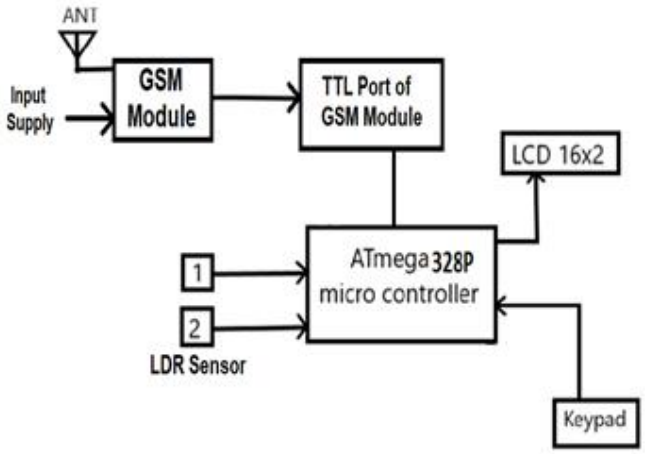

Fig. 1

The above figure Shows the block diagram of Cash Back By Plastic Based Recycling Machine which shows the basic function of our project. There are six blocks which are connected with IC ATmega328p and there working are as follow. The main block which is ATmega328p micro controller from which all the sections are connected. For sensing the plastic bottles and polythene LDR sensor 1 and 2 are use respectively. LCD 16*2 is use to show the mobile number and all instructions for user. Keypad is used to enter the mobile number of user. GSM module is use to connect mobile phone of user with our machine. IC 7805 which is regulator IC use to regulate the supply to our main IC which is ATmega328p micro controller.

2.1: Methodology:

Main function of this machine is when customer insert the scrap bottle in the machine, it sense the bottle and then after that bottle are stored in the colleting container.

After the successful insertion of bottle it is the responsibility of customer to put their contact information from keypad into machine. After this process with the help of GSM Module it sent the reward code on customer mobile number as discount offers. This reward code can be used by customers in any travel agencies and get discount. To reduce the "waste of plastic" back down to its usable size. Our main objective is to collect all the one time use plastic waste. Reduce pollution contamination of soil occurring due to harmful plastic waste.Due to rewards frailties in the form of discount many people should attracted towards this machine to use it.

III. Architectural Model

The explanation of architecture module is as follows :

- In this system we are using microcontroller ATmega328p By using supply input is given to the microcontroller. Here we are using two sensor one is IR infra red and second one is LDR light dependent resistor.
- The working range of LDR sensor is up to 0.7 to 0.9. Generally the frequency is normal to the range.

- By using IC 7085 which is a voltage regulator IC maintains the o/p vtg at constant value and will provide 5 volt regulated power supply .
- The output is in the form of 5Volt DC is given to main IC which is having total 28pins.
- GSM module and LCD is used in the architecture for user input and to display the entered bottle.

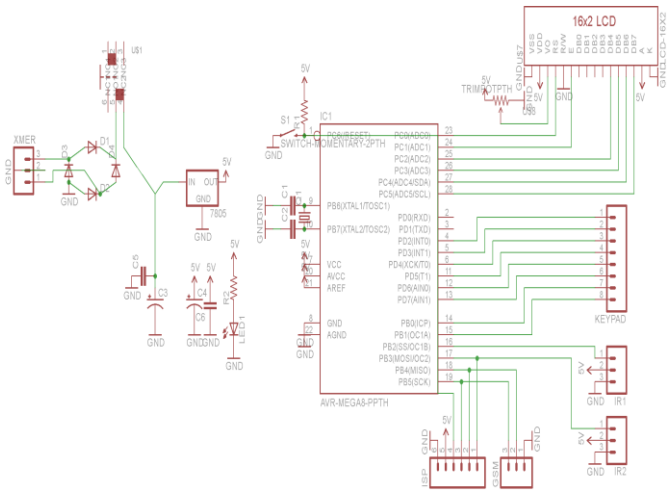

Fig.2 circuit daigram

IV. CONCLUSION

Plastic bottle recycling box is a creative design production based on microcontroller system. Application of embedding technology to waste treatment, not only broaden the technology's application field, but also enhanced the technical level of waste treatment, more over meet people's curiosity for new things, thus achieved the purpose of waste recycling. The experimental result shows the good effect of collector recycling and plastic treatment. Moreover, the recycling box improves the user's participation, autonomy and interesting through onboard reward interactive interface, significantly reduces labor cost through the integration of network information auto management. Recycling box with incentive mechanism, enhanced the refuse classification thinking, reinforced environmental protect awareness, provide a new idea for recycling waste and design corresponding innovation product. So we conclude that this machine will be use to reduce the bulk of plastic from the environment.

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