

# Automatic Urea Briquettes Distribution System

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**Abstract-** The urea is needed for the better plantation. For this, the powder of urea gets spread near the crop, but after some time that urea gets vanishes. There is another method for distributing urea, the farmer puts the tablet of urea called as urea briquettes near the tree but still that briquettes gets vanished and the crop will not get the proper amount of urea for their growth. Also this distribution is done manually. We are trying to overcome this problem by planting that briquettes into the soil. So that they will not get vanish and making the distribution of urea automatically.

**Keywords-** vanish, briquettes, urea, digging etc.

## I. INTRODUCTION

A Wireless Sensor Network (WSN) consists of a large The automatic urea briquettes distribution techniques include a mechanical assembly which digs a soil automatically and put outside. Then from the container some briquettes drop into that soil and again that whole will be covered by the soil. Because of this method urea briquettes will not get disposed.

Because of this technique, the crops gets proper quality and proper amount of nutrients and because of this ultimately the quality of product which we get from the crop gets improved also the quantity gets increased. Though there are few disadvantages like it may be costlier but by neglecting this disadvantage there are too many advantages like its too much faster technique than the techniques we searched. Human efforts get reduced. And because of this it is very convenient method.

Hence our project is very useful for farmers to develop their field ultimately the income which helps to develop the India.

## II. PROPOSED WORK

The project will work on micro controller PIC18F4520 which has a large amount of memory. Its operating frequency is around 40Mhz. Hence the speed of operation is also fast. Our project is divided into two parts, one is transmitter and another is receiver. The block diagram of the same is as shown in figure below

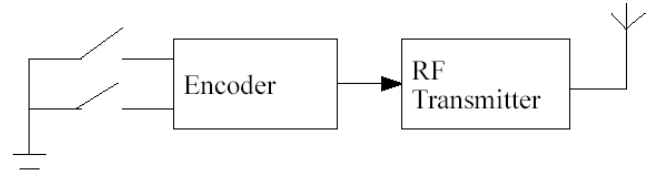


Fig. 1 Transmitter

The block diagram of transmitter is as shown in figure 1. This consist of encoder & RF transmitter. The two switches for ON & OFF operation are provided. This information is gets encoded with the help of encoder. Then this encoded signal is passed to the RF transmitter. The data with the help of RF transmitter gets transmit towards the receiver.

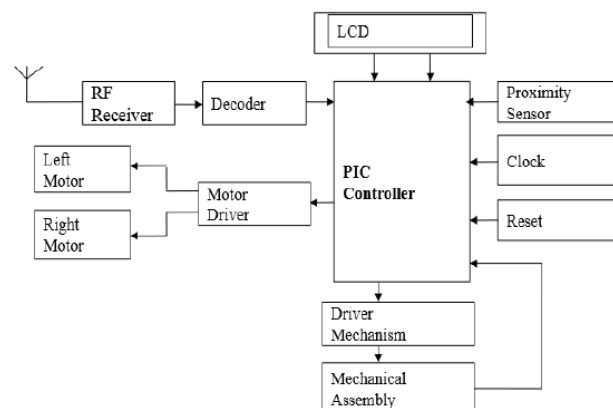


Fig. 2 Receiver

The another part is the receiver part. The block diagram of receiver is as shown above.

Our project contains some mechanical part & some electronic part. Mechanical assembly is an important part of the project. It contains a round container which will open from one side from where we are putting the briquettes into that container. The digging mechanism is attached to the round container to dig the soil. There will be a whole placed exactly opposite to that of digging mechanism. There is one servo motor coupled with the other end of the round container opposite to the open side. This whole assembly is attached to the vehicle having four wheels. Now when this vehicle gets starts, there is a setting that after some time interval the vehicle gets stop the motor attached to the container starts rotating.

Now at the same time firstly that digging mechanism digs the soil, when that part goes upside because of rotation the whole comes down side and through that whole the briquettes gets dropped and after 360 degree rotation the soil which was digs again drop in the same place. After all this process again vehicle starts running for the fixed duration and again same process will gets repeats.

The components present at receiver are: RF receiver, Micro controller, decoder, motors, proximity sensor, LCD & mechanical assembly.

Firstly the RF receiver receives the signal from transmitter. If the signal is start then with the help of decoder /it will decode the signal & the vehicle gets start. Same is the case with stop signal. The decoded stop signal will stop the vehicle.

The proximity sensor will sense the object(here tree). Then that sends the signal to the controller. Then with the help of controller's commands, the mechanical assembly will work accordingly.

If no object is detected then the robot will move forward until the object detected. Also with the help of stop button at the receiver the robot will gets stop.

#### A. Hardware requirement:

1. Micro controller IC(18f452).
2. Encoder IC(HT12E).
3. Decoder IC(HT12D).
4. RF transmitter.
5. RF receiver.
6. Motors.
7. LCD.
8. Mechanical assembly.

#### B. Software requirement:

1. Multisim.
2. MPLAB IDE.
3. Proteus.
4. Protel etc.

### III. SEQUENCE DIAGRAM

#### Algorithm:

1. Start
2. Wait for start signal to be received
3. Start the robot
4. Move robot for 3 seconds

5. Stop the robot
6. Plant the briquettes in soil
7. Update the count on LCD
8. Check if stop signal received, if no go to 5
9. Stop the robot
10. Go to 3
11. Stop

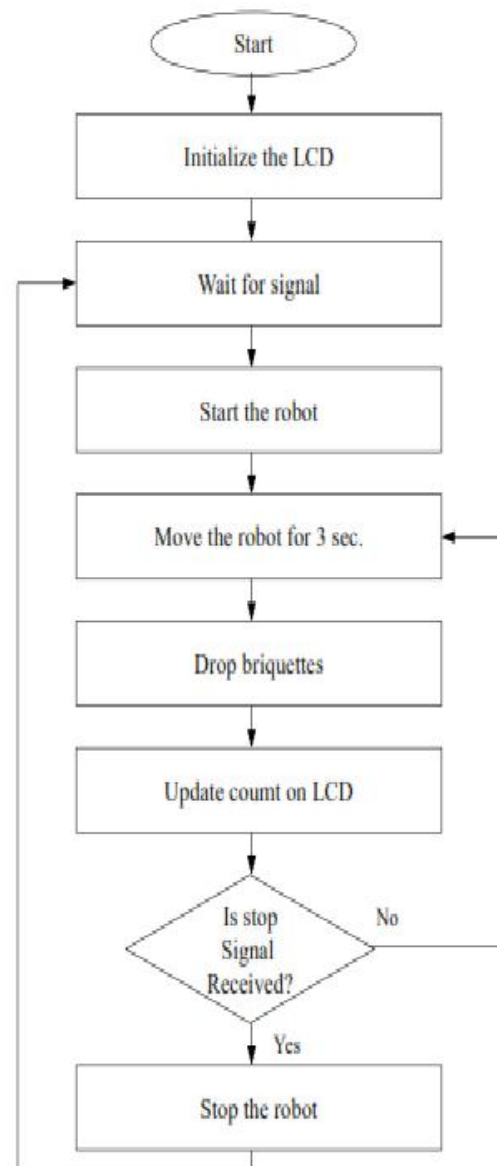


Fig. 3 Flowchart of automatic urea briquettes distribution system

### IV. ADVANTAGES

1. Time Saving.
2. Man power gets saved.
3. Fast speed of operation.
4. Modern method of agriculture.

## V. OBJECTIVE

The urea is needed for the better plantation. For this, the powder of urea gets spread near the crop, but after some time that urea gets vanishes. There is another method for distributing urea, the farmer puts the tablet of urea called as urea briquettes near the tree but still that briquettes gets vanished and the crop will not get the proper amount of urea for their growth. Also this distribution is done manually. We are trying to overcome this problem by planting that briquettes into the soil. So that they will not get vanish and making the distribution of urea automatically.

## VI. APPLICATIONS

1. For planting urea briquettes.
2. For seed plantation.

## VII. CONCLUSION

After studying and doing the project we are concluding that, the system will be more useful, comfortable and convenient to the people. The system is also too beneficial to the farmers. This also gives a good social impact.

## VIII. RESULT

Results of the project are shown in following images.



Fig.4 Start of process

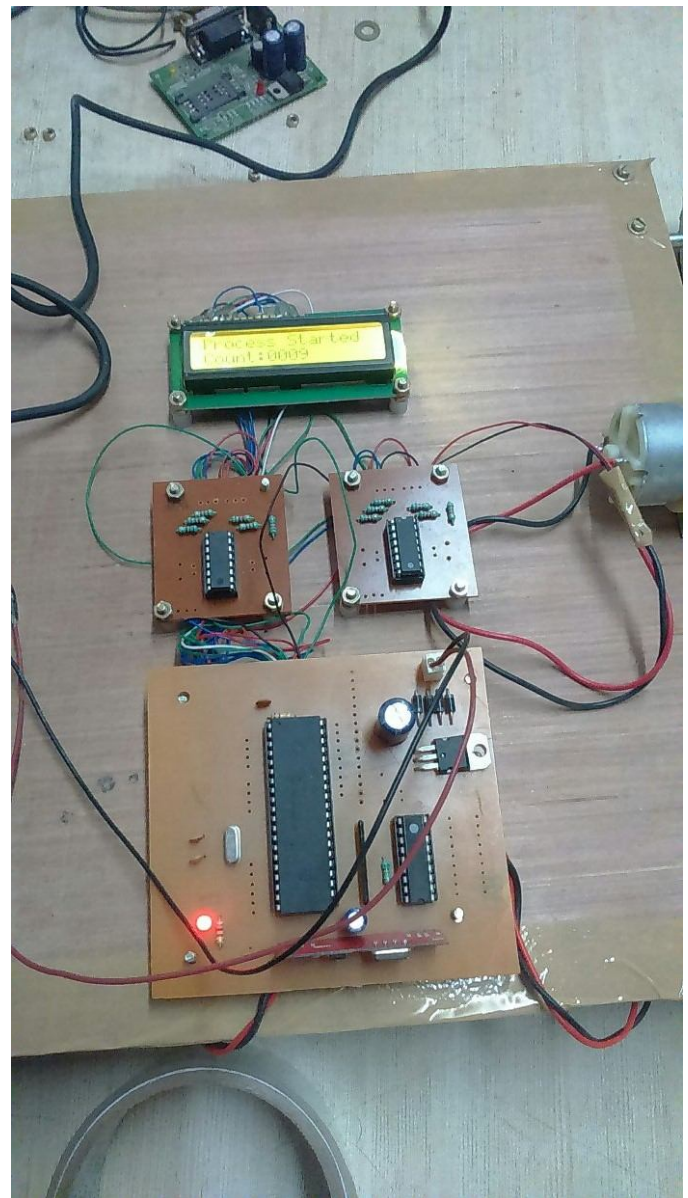


Fig.5 Complete project

## REFERENCES

- [1] Karana, A. SriRamsagar, G. Venkateswarlu, "Mobile Operated Landrover Using Dtmf Decoder", International Journal of Modern Engineering Research, March-April. 2013.
- [2] Nahdatul Akma Ahmad, Mohammad Ashri Abu Hassan, "A Review of Wireless Technology", Faculty of Information Science and Technology, Nov2012.
- [3] C. S. Patil, R. R. Karhe, M. A. Aher, "Review on Generations in Mobile Cellular Technology", October 2012.
- [4] Ankita Mishra, Jyoti Solanki, Harshala Bakshi, Priyanka

Saxena,Pranav Paranjpe, “Design of RF based speed control system for Vehicles” 'International Journal of Advanced Research in Computer and Communication Engineering, October 2012.

- [5] Saliyah Kahar, Riza Sulaiman, AntonSatria Prabuwon, “A Review of Wireless Technology Usage for Mobile Robot Controller”, International Conference on System Engineering and Modeling,June 2012.
- [6] Yongtae Do, Jongman Kim “Infrared Range Sensor Array for 3D Sensing in Robotic Applications Electronic Control Engineering”,Division of Electronic and Electrical Engineering,June 2012.
- [7] T. Kolding, F. Frederiksen, P. Mogensen,“Performance Aspects of WCDMA Systems with High Speed Downlink Packet Access (HSDPA)”,Proceedings of IEEE Vehicular Technology Conference,June 2002..