Published by :
http://www.ijert.org

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 8 Issue 05, May-2019

Solar Seed Sowing Machine

Byre Gowda[1], Karthick N[2],
Lingaraj R B[3], Bhavana C[4]
[1,2,3,4] UG Students,
Department of Mechanical Engineering,
SRSIT College Bengaluru.

Mohan V[5]
[5]Assistent Professor,
Department of Mechanical Engineering,
SRSIT College Bengaluru.

***Abstract*: In today's life moving towards the fast growth of all division including agriculture also. To give good food demand, the farmers must improve their techniques that techniques will not affect the soil but it will increase the crop. The important of this project is to solve the farmer's problems and to develop an agriculture using solar seed sowing machine.**

I.INTRODUCTION

Agriculture is a backbone of Indian people. We know that 60% water in India is used for agriculture. The basic main aim of our project is to put seed and fertilizers in row at definite depth and space, and covering the seed with soil. In olden method there is more problems to over this problem our project will help. And its develop the agriculture all over India. Seed sowing machine which help in sowing of seed in their location and it will support the farmers. In this solar panel are used to store the solar energy from sun, and then it is converted into electrical energy and using 12v battery.

II. LITERATURE SURVEY

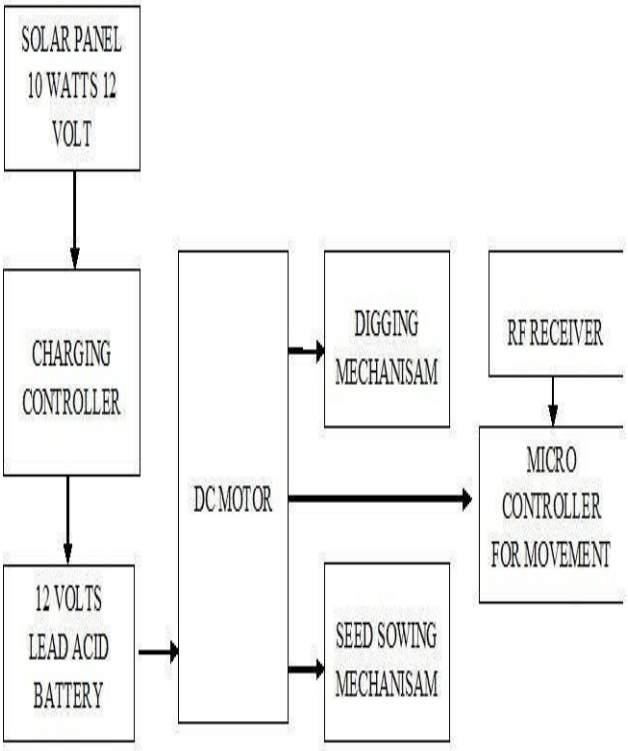
1. Mahesh R. Pundkar: he started the seed sowing machine for the farmers. It has been helps and it used in wide range. The seed are evenly spread at a wide range seed sizes.

2. P.P. Shelke: the agriculture is a fast growth in India. The seed are planting evenly and at definite depth and the crops are spread. The seed planting and population of plant are the circular factors.

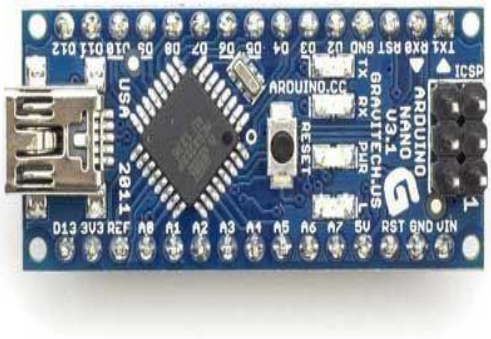
3. M.A. asoodar: he is another agriculture researcher. He spaced at low sizes and low speed rate. The effects of seeding plant technique and machine are used at a low speed rate.

4. Umed ail soomro: in Pakistan he discovered three methods of sowing. It as a sowing seed rate up to 125kg/h. the crops are wheat grains it is evenly spread the seed at definite depth.

III. BLOCK DIAGRAM



IV. MICROCONTROLLER



It is most understand the Arduino board in a microcontroller, and this microcontroller will control the instruction of our project. "Arduino is also a microcontroller."

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 8 Issue 05, May-2019

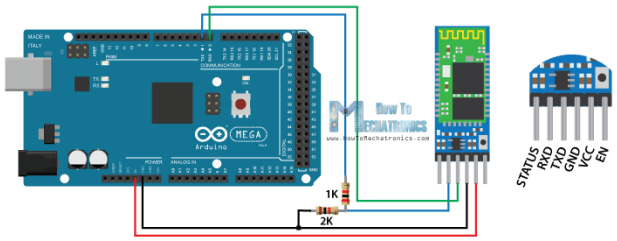
The MCU is used in a Arduino UNO R3 as a important controller. This Arduino is a 8bit device it stores all bus architecture and all signals.
They are three types of memory in AT mega328:

i.Flash memory: it is used to store a application. It is 32KB memory. We don't need to upload our application every time we remove the Arduino from its power source.

ii.SRAM memory: It is 2KB memory. It is used to store many application when the running.

iii.EEPROM memory: It is 1KB memory. It is used to store a data when powered is off and powered is on again.

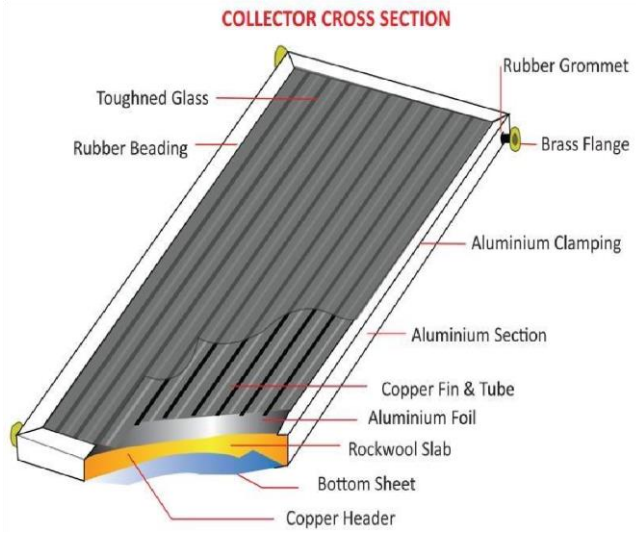
Circuit schematics:



The circuit have a power from 3.6 to 6 volts. It is a brake out board which as a voltage regulator. The logic voltage level is 3.3 v. it has line between the Bluetooth module and Arduino. It is to be connected throughout a voltage. In order to burn Bluetooth to be accept the high data at a Arduino board.

Arduino code:
We ready to make the Arduino code the communication between the Arduino board and the phone **Explanation:**
We should know about pin to which our led will be connected and which will be stores a data from a phone. In the next set we should now about led pin as output and it should be at low. As mentioned before, we are using continues communication so we need to start the communication at 38400 rate and it default rate of Bluetooth.

V. SOLAR PANNEL



The lead acid- battery as invented in 1859 by French physicist and is the oldest type of rechargeable battery. Despite having a very low energy-to-weight ratio and a low energy to-volume ratio, its ability to supply high surge currents means that the cells have a relatively large power-toweight ratio. These features, along with their low cost, make them attractive for use in motor vehicles to provide the high current required by automobile starter motors.
As they are inexpensive compared to newer technologies, lead–acid batteries are widely used even when surge current is not important and other designs could provide higher energy densities. Large-format lead– acid designs are widely used for storage in backup power supplies in cell phone towers, high-availability settings like hospitals, and stand-alone power systems. For these roles, modified versions of the standard cell may be used to improve storage times and reduce maintenance requirements. Gel- cell and absorbed glass mat are common in these roles, collectively k battery to be used in different positions without leakage. Gel electrolyte batteries for any position date from the 1930s, and even in the late 1920s portable suitcase radio sets allowed the cell vertical or horizontal (but not inverted) due to valve design.

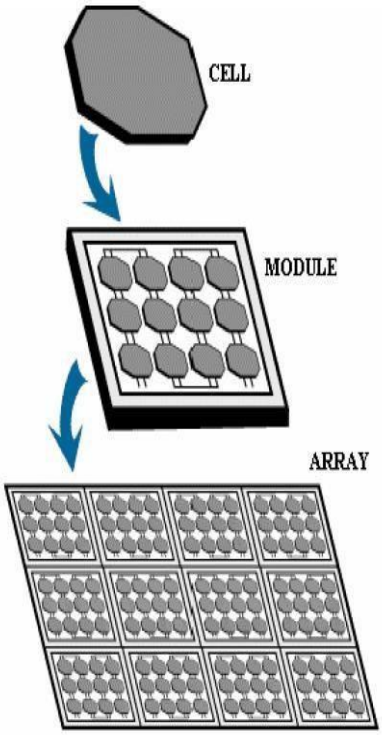
Solar panels are a great way of cutting your electricity we all want to live selfsustainably, or at least reduce the carbon footprint of our home, and solar panels make that dream possible. Solar panels are made of photovoltaic (PV) cells, which turn sunlight into electricity. This electricity can then be fed into your home's mains electricity supply. The technology behind solar is relatively old, despite their futuristic appeal, but while the basics are the same the efficiency of solar panels has improved greatly in recent years. Rated power 15W Frame Heavy duty aluminum Kind of connection waterproof junction box, can be customized Guarantee of power 90% within 10 years 80 within 25 years, Kind of glass and its thickness Low Iron, high transparency tempered glass of 3.2mm SLA Battery Voltage 12V 12 inch x 18 inch.

VI. MOTOR DRIVE

Motor drives are circuits used to run a motor. In other words, they are commonly used for motor interfacing. These drive circuits can be easily interfaced with the motor and their selection depends upon the type of motor being used and their ratings (current, voltage).
Motor Driver circuits are current amplifiers. They act as a bridge between the controller and the motor in a motor drive. Motor drivers are made from discrete components which are integrated inside an IC. The input to the motor driver IC or motor driver circuit is a low current signal. The function of the circuit is to convert the low current signal to a high current signal. This high current signal is then given to the motor. The motor can be a brushless DC motor, brushed DC motor, stepper motor, other DC motors etc. The Motor Driver is a module for motors that allows you to control the working speed and direction of two motors simultaneously .This Motor Driver is designed and developed based on L293D IC.L293D is a 16 Pin Motor Driver IC. This is designed to provide bidirectional drive currents at voltages from 5 V to 36 V.

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 8 Issue 05, May-2019

VII.PHOTOVOLATAIC CELL



Photoelectric effect was first noted by a French physicist, Edmund Becquerel, in 1839, who found that certain materials would produce small amounts of electric current when exposed light. In 1905, Albert Einstein described the nature of light and the photoelectric effect on photovoltaic technology is based, for which he later won a Nobel Prize in physics. The photovoltaic module was built by Bell Laboratories in 1954. It was billed as a solar battery was mostly just a curiosity as it was too expensive to gain widespread use. In the 1960s, the industry began to make the first serious use of the technology to provide power aboard spacecraft. Through the space programs, the technology advanced, its reliability was established, and the cost began to decline. During the energy crisis in the 1970s, photovoltaic technology recognition as a source of power for nonspace applications. The solar cells that you see on calculators and satellites are also called photovoltaic (PV) cells, which as the name implies (photo meaning "light" and voltaic meaning "electricity"), convert sunlight directly into . A module is a group of cells connected electrically and packaged into frame (more commonly known as a solar panel).

VIII. WORKING PRINCIPLE

This solar powered seed sowing machine basically works on vertical discontinue working principle refers to the vertical movement which can be followed by an individual body in an agricultural filed and implements its discontinuous action in relation to the Horizontal line of work. As per name indicate this machine is used for sowing seed.

First drilled with the help of a 4 inch land drill bit having shaft diameter of 7 mm and Diameter of edges - 25 mm With a Depth of cut of - 76.2mm This is run with the help of motor Of 300 RPM and 12 kg-cm torque. This is connected to 12 V and 7 A DC battery. This is directly connected to the solar panel through which it gets charged. This motor is controlled by a 8 bit Microcontroller .with help of which it can be start and stop .and we can also control the Clock wise and anticlockwise motion of motor. For dropping seed we are using a hopper which is mounted behind motor show in figure above and a lever arrangement is provided on handle when this lever is pressed seed will be dropped automatically from hopper travel into a pipe attached to and dropped in hole. An adjustable Iron plate is fitted in rare side of machine which will soil a cover the land with is drilled. In this way seed sowing is done with this machine.

IX. CONCLUSION

We have studied well about our project work of solar seed sowing machine. We wish to complete this project in a given period. The first step we saw the ratings of components. Later we choose the main component dc motor it is depends on the weights of the system. In seventh SEM we designed the machine and we choose aluminium component because it is cheaper and stronger. In this SEM we purchased material, assembly and testing of our project solar seed sowing machine.

REFERENCE

[1] Mahesh. R. Pundkar and A. K.Mahd -Sowing Machine: Review" International Journal of Engineering and Social SciencVolume3, Issue3, Pp-68-74

[2] Laukik P. Raut, Smit B. Jaiswal and NitinY. Mohite, "Design, development, and fabrication of agricultural pesticides. with weeder", International Journal of Applied Research and Studies, 2013.

[3] Ramesh and H. P. Girishkumar, "Agriculture Seed Sowing Equipment: A Review", International Journal of Science, Engineering and Technology Research, 2014, Volume 3, Issue 7, Pp-1987-1992

[4] Pranil V. Sawalakhe, Amit Wandhare, Ashish Sontakke, Bhushan Patil, Rakesh Bawanwade and Saurabh Kurjekar, "Solar Powered Seed Sowing Machine", Global Journal of Advanced Research, Vol-2, Issue-4, Pp-712-717

[5] Sridhar H .S "Development of Single Wheel Multi-Use Manually Operated Weed Remover", International Journal of Modern Engineering Research, 2013.