**Project Reference Number:** 46S_BE_4594

**Title of the project:** SOLAR OPERATED MULTIPURPOSE AGRICULTURE MACHINE

**Name of the College & Department:** REVA University, Mechanical Engineering

**Name of the students & Guide:**

| | |
|---|---|
| **Students** | Mr. KARTHIK L<br>Mr. MARUTHI J<br>Mr. MUJAHID PASHA S R<br>Mr. VARUN V |
| **Guide** | Dr. JEGADEESWARAN N |


**Keywords:** Agriculture machine, Solar panel, DC motor, battery, Mechanism, IoT.

## Introduction:

In the present work, agricultural machines which are developed have only single functionality i.e. either only seed sowing or water/fertilizer spraying or only weeder mechanism. The function of this agricultural machine depends on the amount of solar energy that the solar panel receives and this solar energy is used to drive the different parts of the machine. The crystal based solar panel is use to charge a rechargeable battery of 12 volts. From the battery the stored electrical energy is sent to DC motor which is used to drive it. The motor converts electrical energy to mechanical energy and this energy is used to perform different operations like water spraying, grass cutting, seed sowing with the help of IoT. This machine reduces the human effort in the field of agriculture and finds a solution to increase the mechanization in the fields. This machine is mainly useful for small size farms in order to increase the productivity. This vehicle runs on solar energy which is renewable and is easily available. This machine makes use of different mechanisms like chain-sprocket mechanism and worm and spur gear mechanisms in order to carry out these operations and controlled by IoT, By using advanced technology of Blinky app and JAVA programming to control the entire operations of machine.

## Objective:

- To give farmer friendly multipurpose agriculture machine operated by solar power
- To avoid use of any chemicals and hence prevent the crops from any

chemicals.

- To make grass cutting, sowing seed and spraying simultaneously.

**Methodology:**

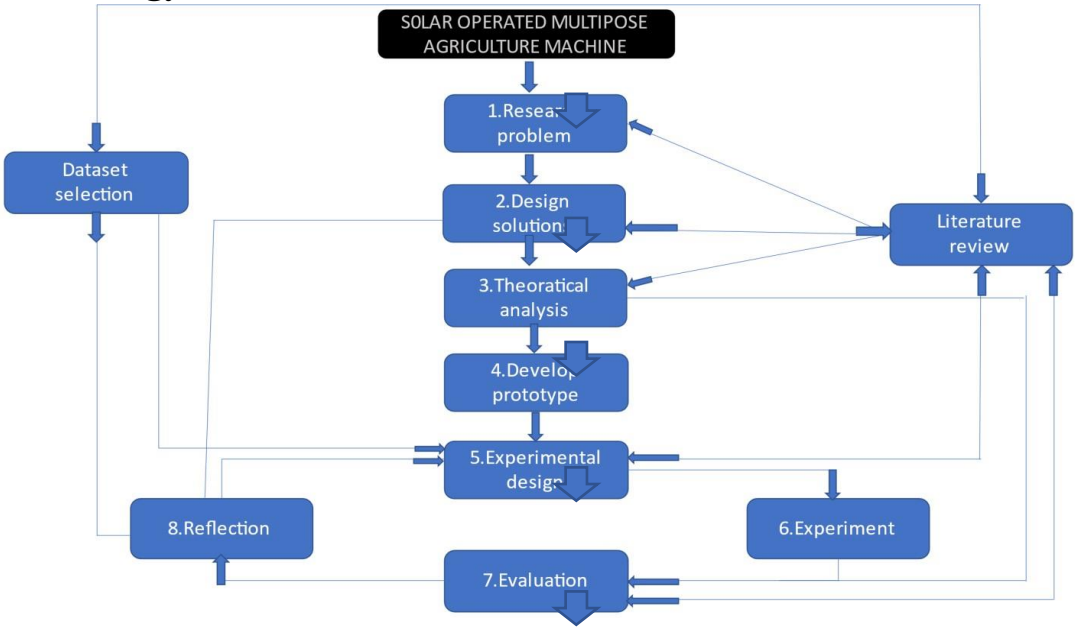


Fig.1 Flow Chart of research methodology

**Results and Conlusions**:

The "SOLAR POWER OPERATED MULTIPURPOSE AGRICULTURE MACHINE" aims to perform various operation of the agricultural, which are accomplished by using various components like solar panel, D.C. motor and motion transmission mechanisms. The various component required for building the multipurpose agricultural equipment has been designed as planned. Multipurpose agricultural vehicle is single system which can perform multi operations like sowing, water sprayer, cultivating, leveling. It can also be used for local transportation purpose for material handling Multipurpose agricultural vehicle will reduce external changes like fuels; electricity etc. and his will be helpful for poor farmers. Multipurpose agricultural vehicle is a single system which contains multi attachment. The equipment weight is around 10 to 15 kg thus it can be carried easily in farmland. The equipment can do the work of 4 labours a day which reduces the labour cost of the farmer.


Fig. 2 working model

## Scope of future work:

- Increase the capacity of the battery.
- Replace with high RPM motors.
- Can also involve the ploughing in machine.