K. S. GROUP OF INSTITUTIONS

K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU-109

SOCIALLY RELATED PROJECTS- ELECTRICAL AND ELECTRONICS ENGINEERING

FABRICATION AND TESTING OF THREE WHEELER ELECTRIC GO KART

The main aim of our project is to Fabricate and testing of three wheeler electric GO KART. Passenger vehicles are a major pollution contributor, producing significant amounts of nitrogen oxides, carbon monoxide, and other pollution. Due to the moving parts in the vehicles maintenance cost comes into picture which puts a burden on common people. People usually tend to search gas stations with cheaper prices which become difficult for refueling of the vehicle. Electric vehicle is an alternative fuel automobile that uses electric motors and motor controllers for its operation, in place of other conventional methods like internal combustion engine(IC). Electric vehicle is powered by on-board battery packs, thus getting the name battery electric vehicles (BEV). Electric vehicles are currently gaining popularity everywhere for their eco-friendly nature. The project based on conversion of conventional vehicle into Electric vehicle has been designed, implemented and experimental work has been carried out carefully at low prices. In this work fabrication of the vehicle is to be made using the recycled materials. A whole new Lithium-ion battery pack was designed and built for this vehicle. The Energy density of the Lithium-ion battery was compared with Lead-acid battery, Nickel Metal Hydride battery, and Lithium-polymer battery. No load Testing of motor and charging, discharging testing of lithium-ion battery is done. Simulation of the electric circuit is done using tinkercad software and mechanical outer body part 3D diagram is done using solid works software. The moving mechanical body of 3 wheel electric vehicle is practically done by the process of welding, drilling, lathe works and cutting etc.

Figure: Fabricated Electric Vehicle

Design and Development of Solar Powered Autonomous Multipurpose Agricultural Robot using IOT

The main aim of the project is to design and develop a solar power autonomous multipurpose agricultural robot using IoT. This project helps the famers in performing agricultural activities like seed sowing, digging, levelling, pesticides spraying etc...This system uses solar energy as the power for the entire robot. Sensors are used to check the temperature of the soil and moisture in the soil. The operations that are done during agricultural such as seed sowing, digging, pesticides spraying, water pumping, levelling etc.. can be easily done by the robot. The robot can be operated manually or automatically. The operations can be controlled by the farmers by using the android app where the robot and the android mobile will be connected Via Bluetooth. The multipurpose Agricultural robot is designed to be able to use by the farmers, which performs various operations like digging, seeding, levelling, cutting, water pumping. The proposed Agricultural robot is energized with the solar power. LCD, DC gear motor, H-Bridge and sensors have been interfaced by writing the program in C language and burnt in Arduino microcontroller. The Navigation and the operations which will be going to performed by the Agricultural robot is implemented and tested by using the proteus software.

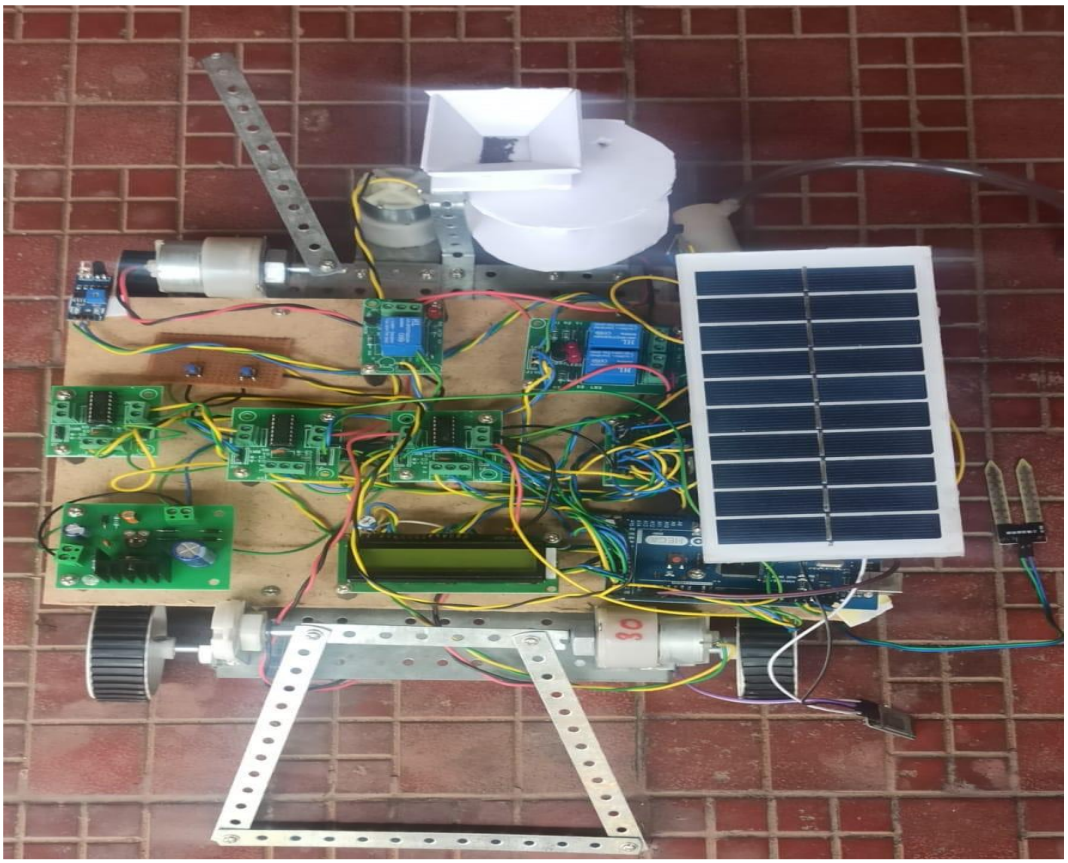

Figure: Developed Model of Multipurpose Agricultural Robot

Design and Development of Internet of Things Enabled Livestock Monitoring and Controlling

The main aim of the project is to Design and Develop Internet of Things enabled livestock monitoring and controlling system.This system should provide feed and water as required, exhaust the excess of biogas which is produced by the animals waste, and detect fire in the farm. Moreover, this intelligent system should also do surveillance of the entire farm. This kind of intelligent system can be designed cost effectively by using microcontrollers, water level sensor, gas sensor, temperature sensor and with Internet or Intranet connectivity with the devices i.e. smart phones or computer. Using these features, we develop an IoT based smart animal farm.It continuously monitors the physical parameters of the livestock. It can be controlled manually as well as automatically. This design is suitable for any kind of livestock with slight modifications. The design of smart livestock farm requires less human intervention.

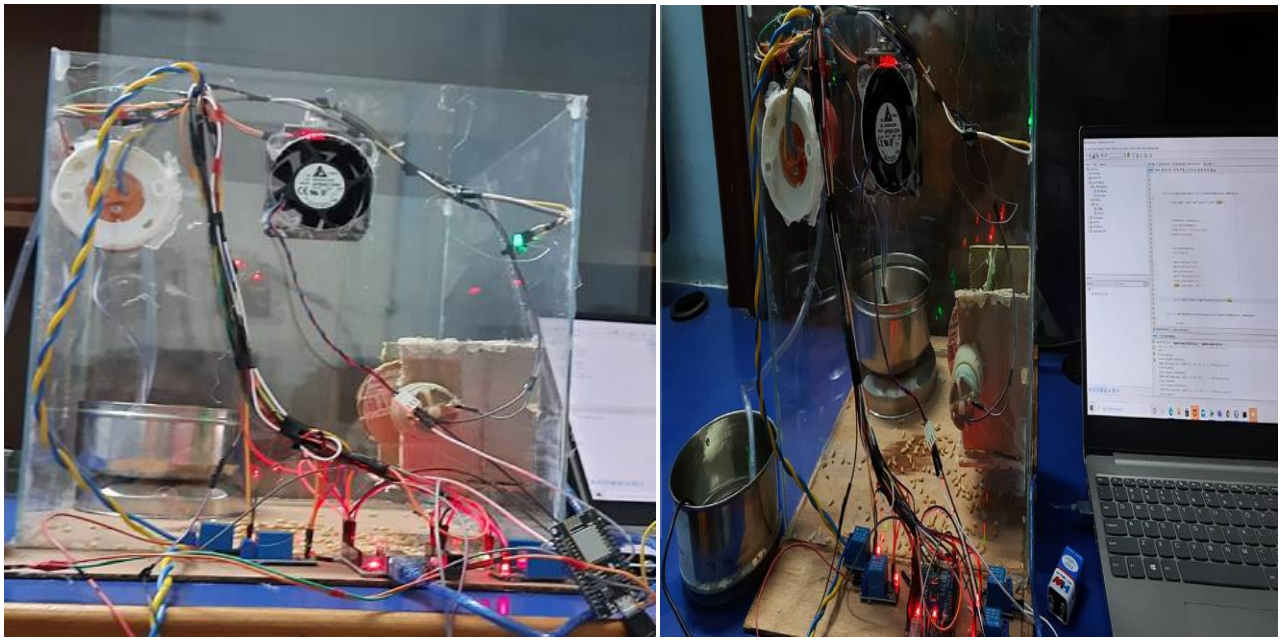

Figure: Developed Hardware Model