

Aavishkar

Inter-Collegiate/Institute/Department Research Convention

Category: Engg. & Tech.

Slot No.:

Level: UG

IOT Based Smart Solar Hybrid Tree with Monitoring using Green Energy

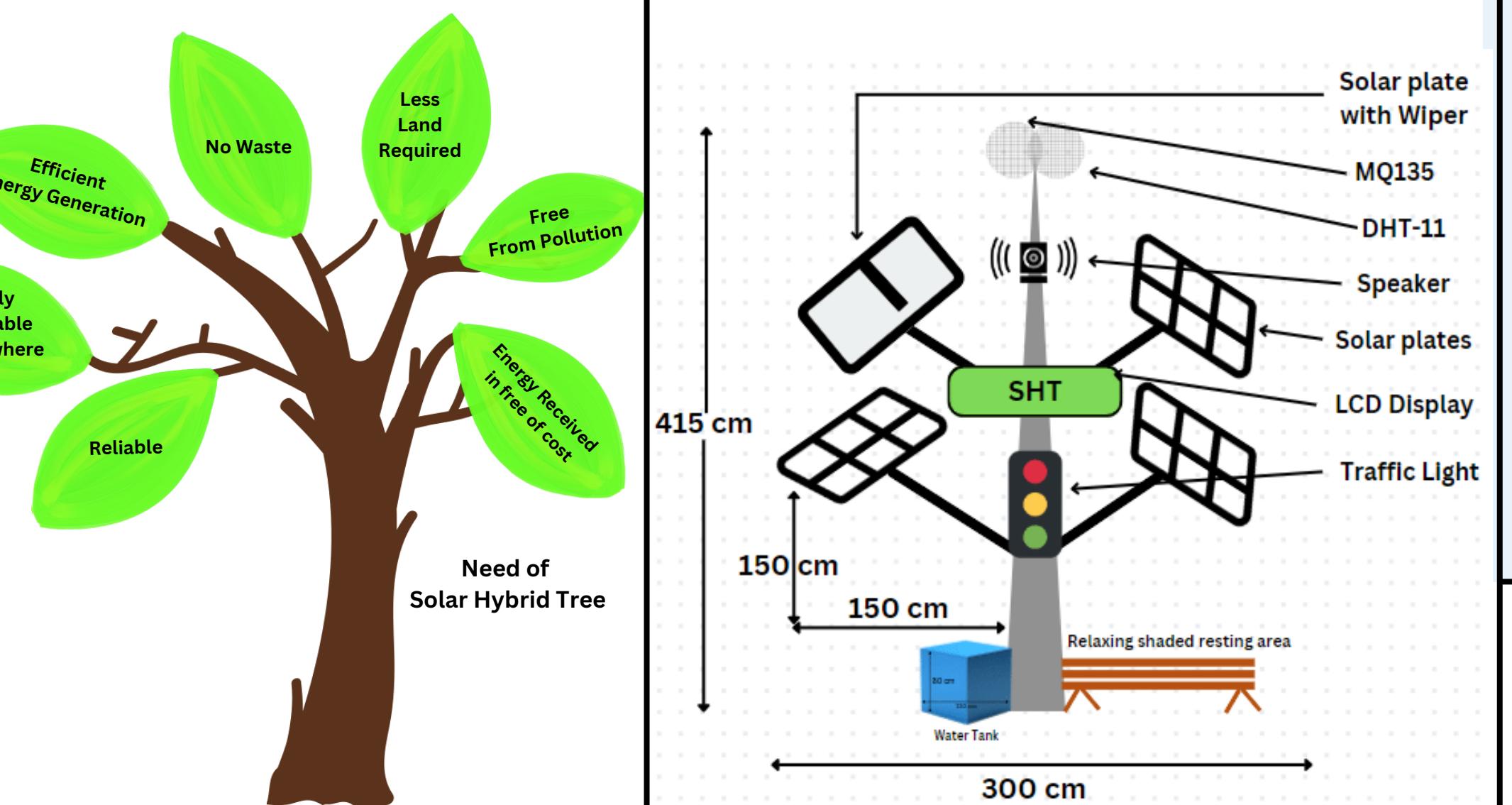
INTRODUCTION

India is blessed with an abundance of sun radiation, which draws the development of numerous solar photovoltaic power plants. The continuous demand-supply imbalance in the electricity sector can be effectively addressed with the help of renewable energy sources. In the same way that green leaves produce food for living things, they also generate energy for society. So, it is extremely reasonable to designate it as tree. The hybrid solar tree is built to guarantee that each solar panel receives the most sunshine possible while casting the fewest shadows possible on any other panels. This guarantees that the solar tree will produce the most electricity feasible.

Utilizing renewable energy has both environmental and financial advantages, such as producing energy without the use of fossil fuels and reducing some forms of air pollution. increasing energy supply diversity and decreasing reliance on imported fuels.

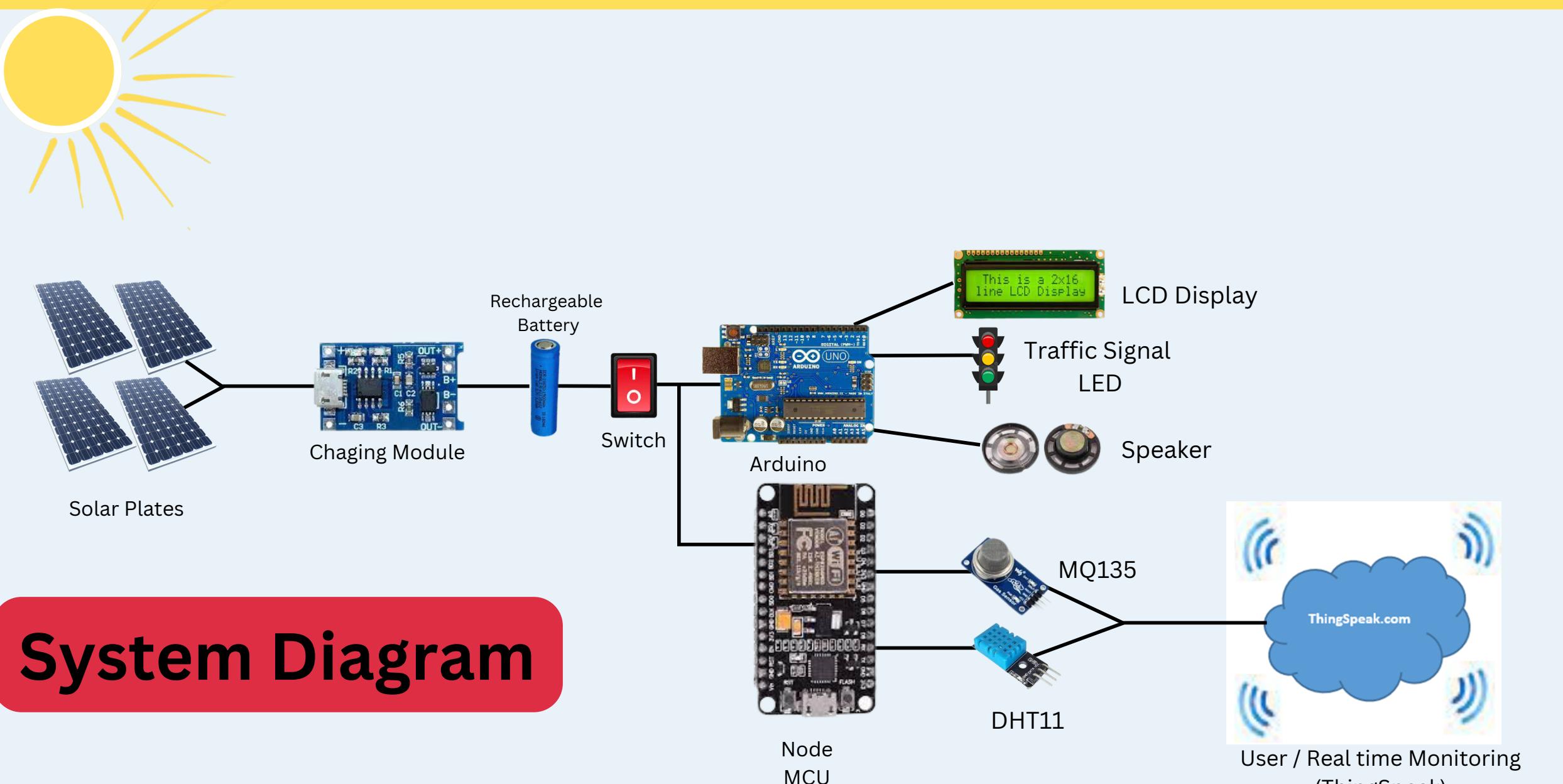
OBJECTIVES

- To fulfill the growing Energy demands using Renewable Energy Source of Solar Rays
- To use Green/Renewable Energy by Different Applications
- To reduce Pollution from Power Plants
- To convert the Sun rays into Electrical Energy
- To develop the Rural/Remote Areas

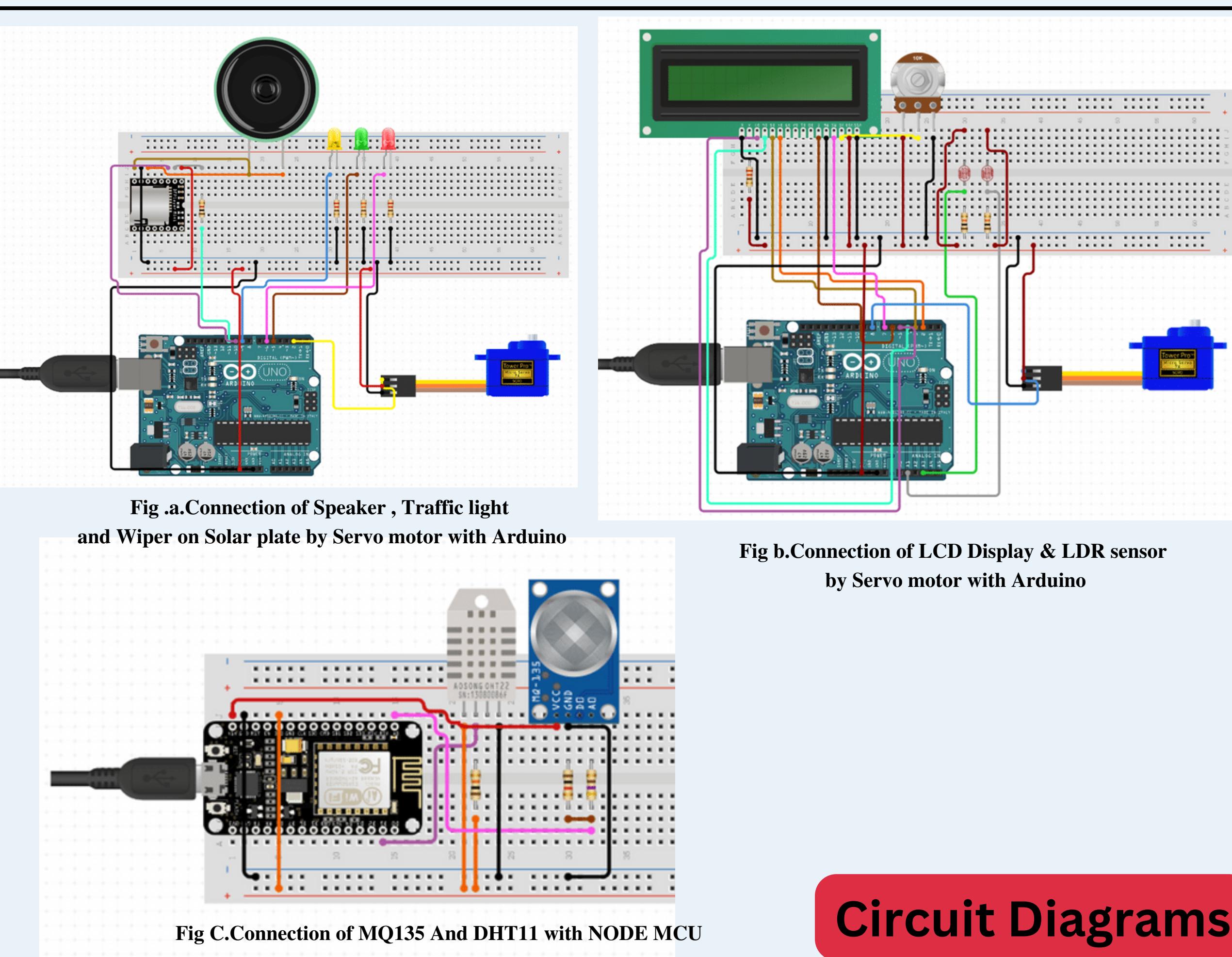


Need Of SHT

Structure Diagram



System Diagram



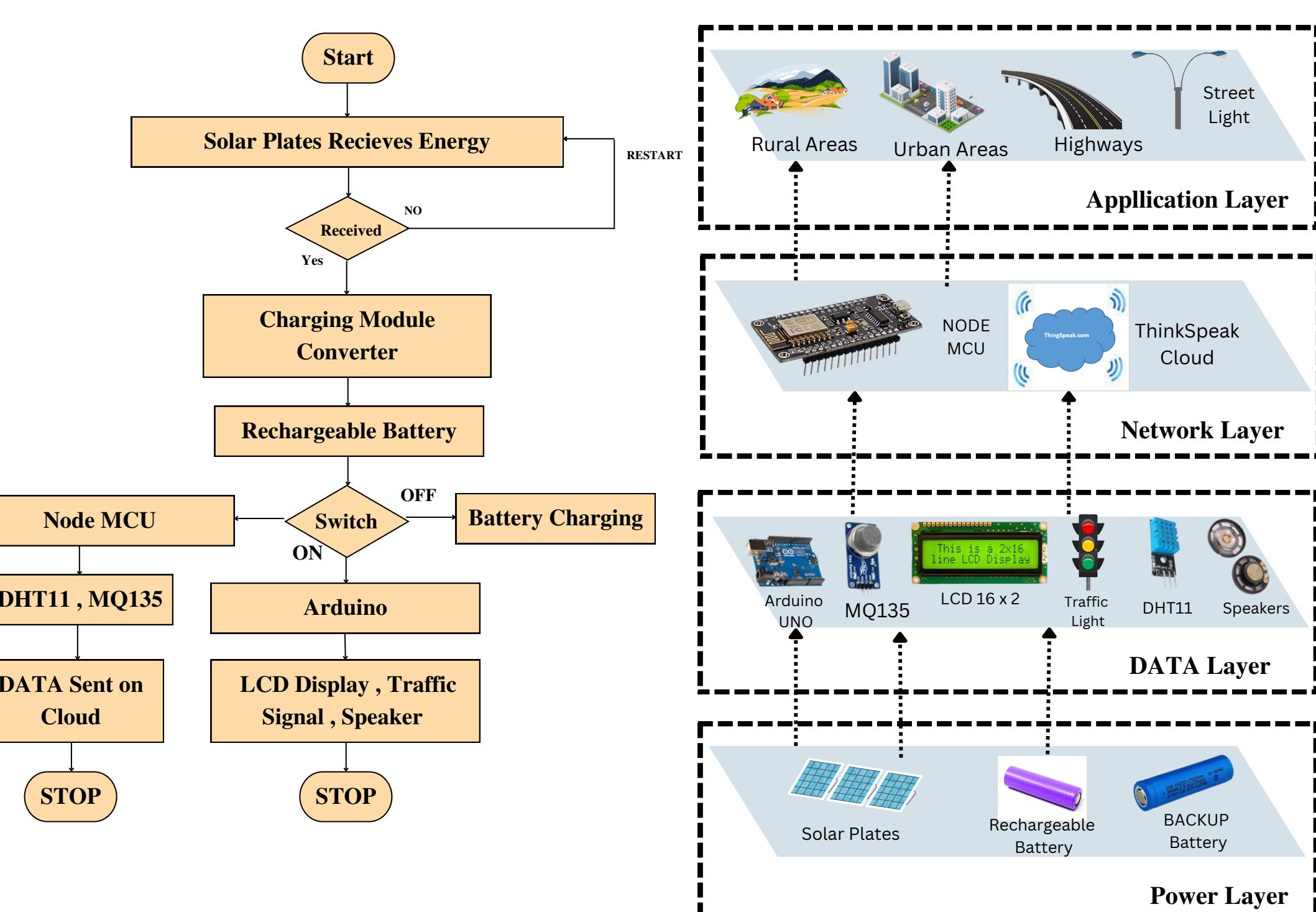
Circuit Diagrams

Result & Analysis

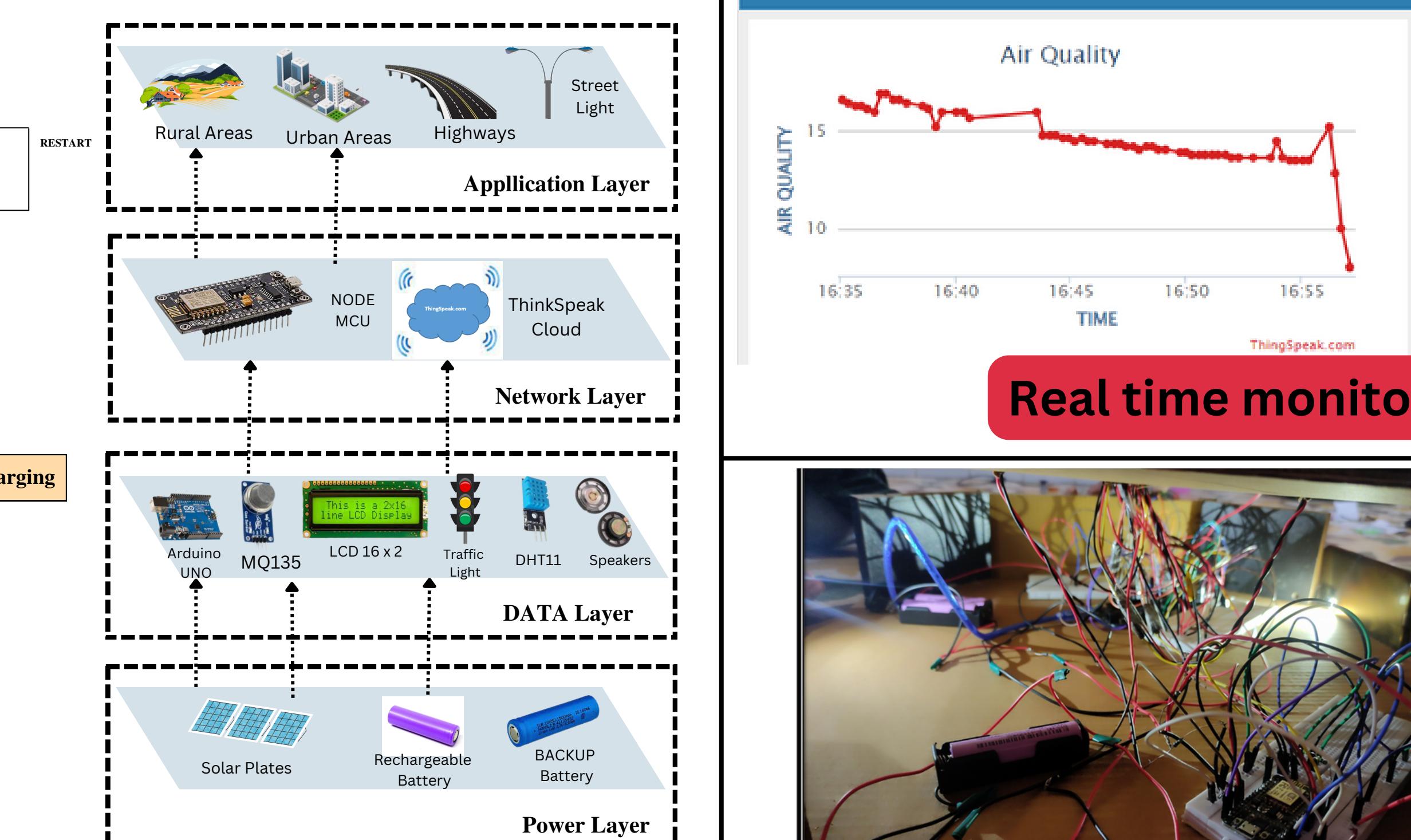
Solar System Size	Solar panel Power	No. of Solar Panels	Annual External Output	Implementation Cost(Rs)	Annual Money Saving(Rs)
1kW	200watt	5	1440kWh	78500	14400
2kW	400watt	5	2880kWh	84500	28800
3kW	600watt	5	4320kWh	91000	43200

CONCLUSION

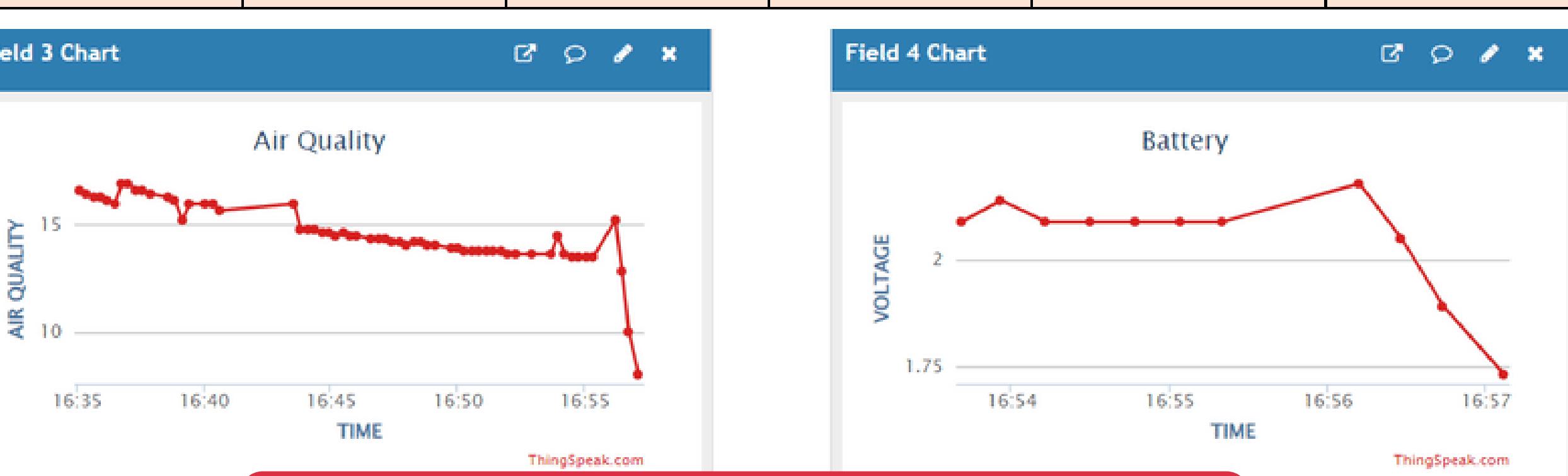
- Increased use of renewable energy will help maintain a sustainable environment.
- In this research, many remote areas, streets, societies, plazas, hospitals, and schools can be lighted. Easily locating highly polluted areas
- It will also satisfy the increasing demand for electricity with hybrid solar trees. Power can be supplied to villages located far from the construction sites of large power generation plants such as hydroelectric and nuclear plants.



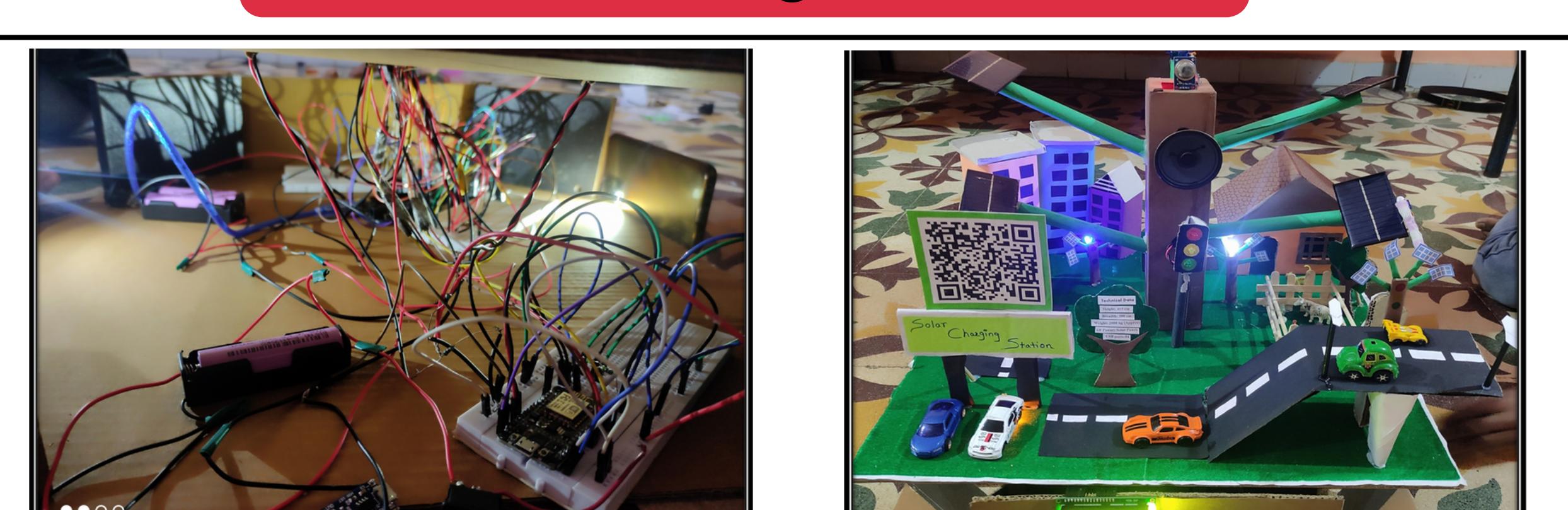
Flow Diagram



Architecture Dig. of SHT



Real time monitoring of Sensors Data



ACTUAL CIRCUIT

FINAL VIEW

FUTURE ENHANCEMENT

- Back-up Batteries
- Monitoring of power consumption by Solar Hybrid Tree
- Weather Forecasting using Sensors
- Alert messages to government offices using GSM module
- Maintaining the records of vehicles using Camera (e.g.: Toll Plaza)
- Generating Oxygen through SHT

REFERENCES

[1] Sujit Patil, RavinderNangare, Rajesh Mane, Suraj Jadhav, Nilesh Patil, DhananjayGavali, "oxygen, hydrogen and light generation using solar tree", International Journal of Industrial Electronics and Electrical Engineering, ISSN: 2347-6982 Volume-5, Issue-3, Mar.-2017.

[2] Jeng-Nan Juang and R. Radharamanan, "Design of a Solar Tracking System for Renewable Energy", Proceedings of 2014 Zone 1 Conference of the American Society for Engineering Education (ASEE Zone 1), 2014.

[3] KalyanKampani, Suhas D. Shete, "pic-controlled oxygen and light generation using renewable resources" International Journal of Technical Research and Applications, e-ISSN: 2320-8163, Volume 3, Issue 5, PP.198-203, (September-October, 2015).