MPPT CHARGE CONTROLLER DESIGN AND APPLY TO AIR QUALITY SYSTEM

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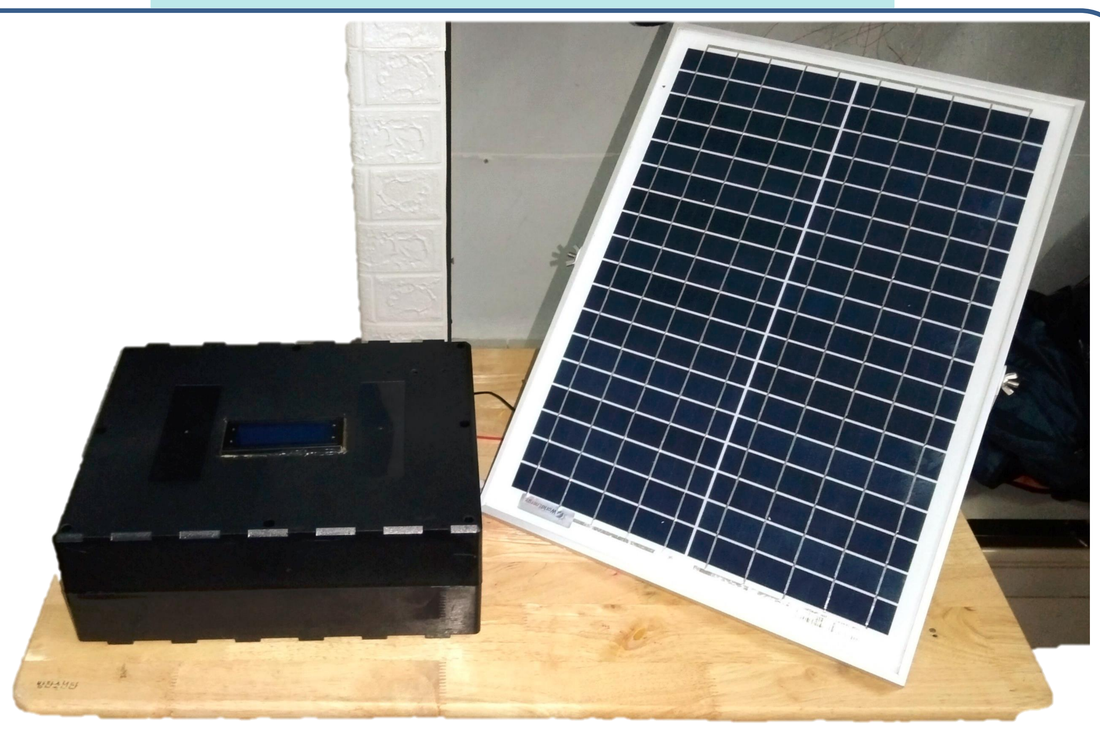
OBJECTIVES

- To create a model of MPPT charge controller.
- To evaluate the efficiency of the solar panel when it uses MPPT algorithm.
- To supply and analyze solar energy for the air quality monitor system.
- IOT solution application to monitor status of solar energy system.

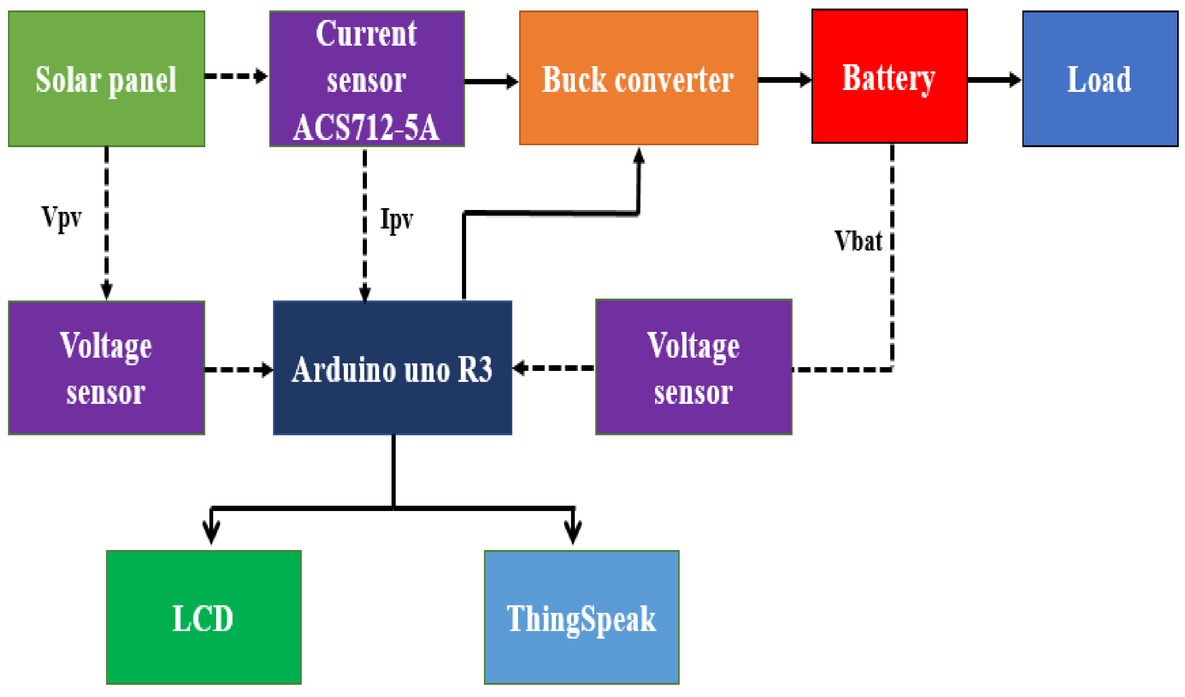
INTRODUCTION

- Solar energy leads the way in power generating capacity and is considered a energy source of new generation in the world. However, PV systems still perform low efficiency so the improved efficiency of the solar panel is a concerning challenge.
- MPPT charge controller is designed to improve the efficiency of solar panel. IOT solution is also applied to monitor status of solar panel.

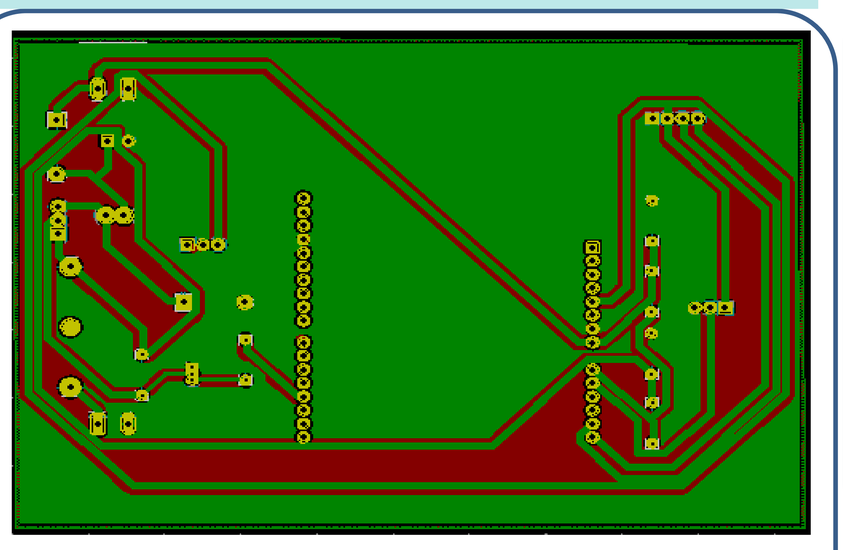
SYSTEM MODEL

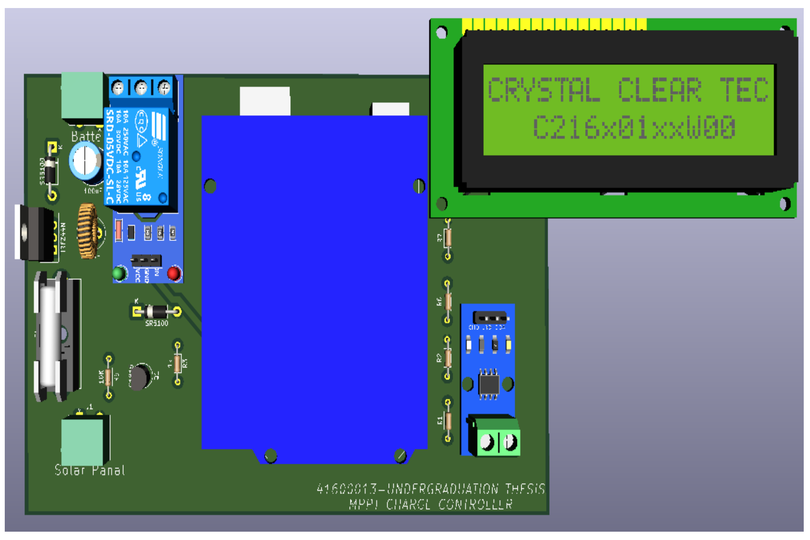


BLOCK DIAGRAM OF SYSTEM

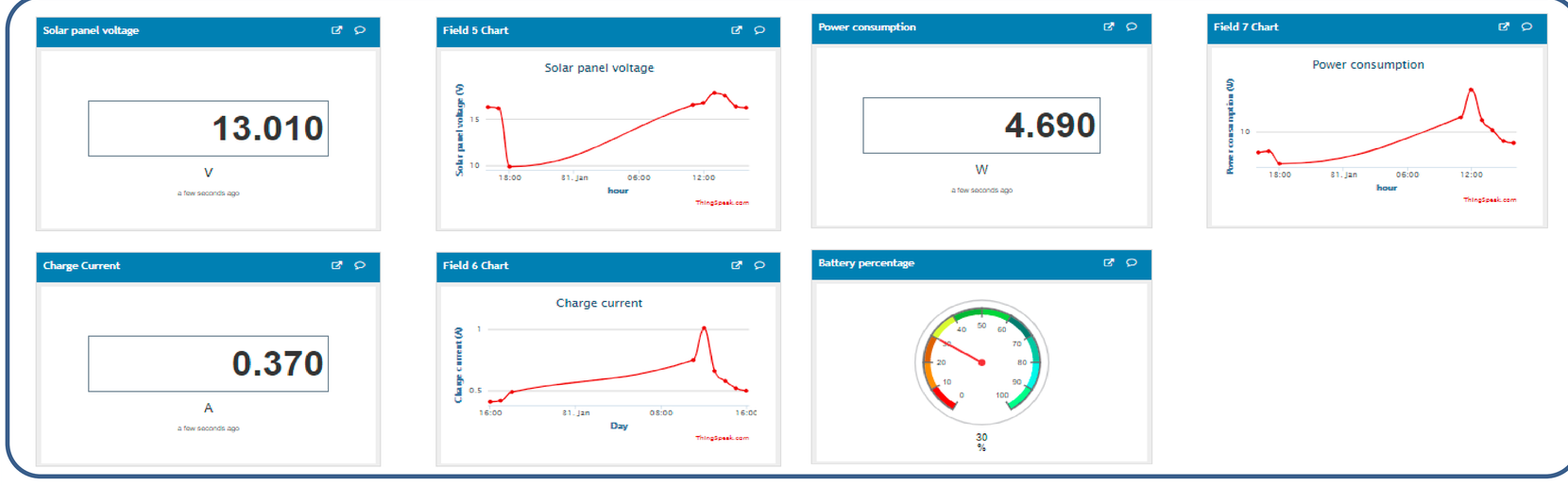


PCB DESIGNING OF SYSTEM

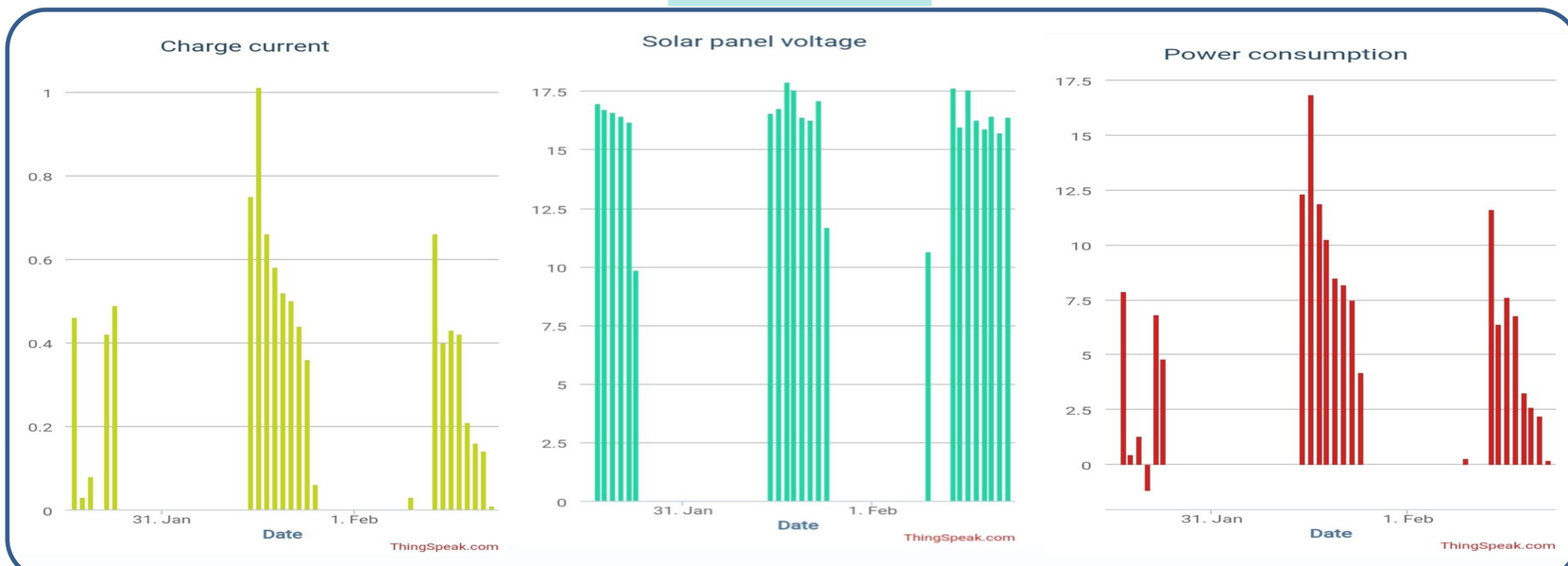




DASHBOARD OF SYSTEM



RESULT



CONCLUSIONS

- The battery is charged at the maximum power point.
- MPPT charge controller is equipped with an IOT platform that easily monitor the condition of solar panel.
- MPPT charge controller has a performance and efficiency around 94%.
- MPPT charge controller works stable, safe, correct.

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