



Science

## **EXPERIMENTAL STUDY AND PERFORMANCE OF SOLAR ENERGY SYSTEM WITH GRID CONNECTED POWER SUPPLY**

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### **Abstract**

In this paper, we are analyzed about the solar power with grid connection using of various component such as PV Cells battery inverter, and grid power connection, in this way we are connected the grid power and solar power, after that finally we are analyzed the power quality of output with the help of various devices.

**Keywords:** Word- Solar Energy; Grid Power; Invertor.

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### **1. Introduction**

The solar power system are mostly used in rural area because of low maintenance cost, in this way the solar power are used with grid. The final power supplies are achieved. The electrical energy are obtaining from the rays of sun, after that we are achieve the D.C. Voltages, these electrical energy are storages in battery. The 220V A.C. power supply is obtained with the help of invertor, the input of invertor is connected from terminal of battery. The PV system has static and free of moving parts, in this way less maintenance.

## 2. Experimental setup

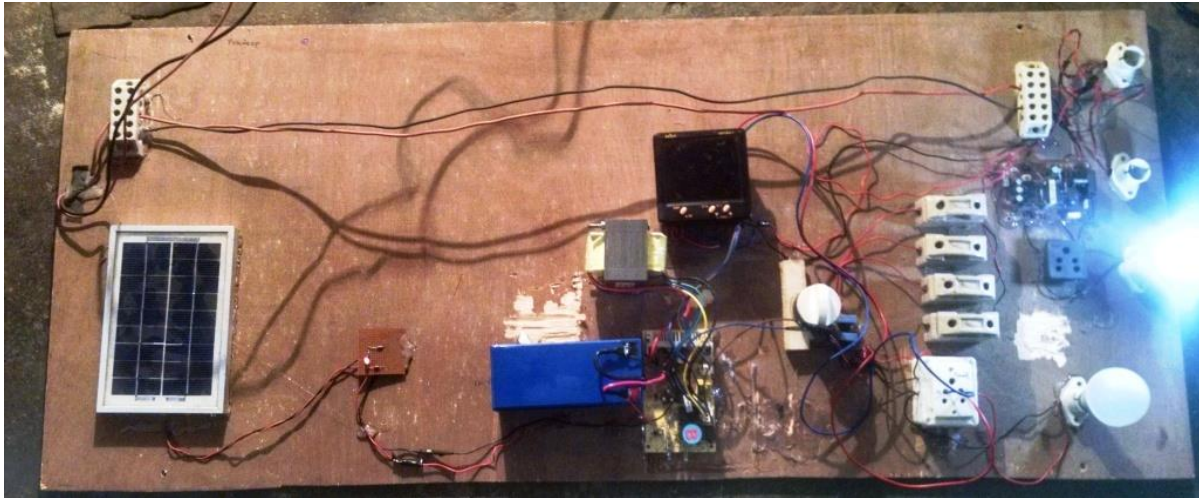


Figure 1: Experimental setup

## 3. Components

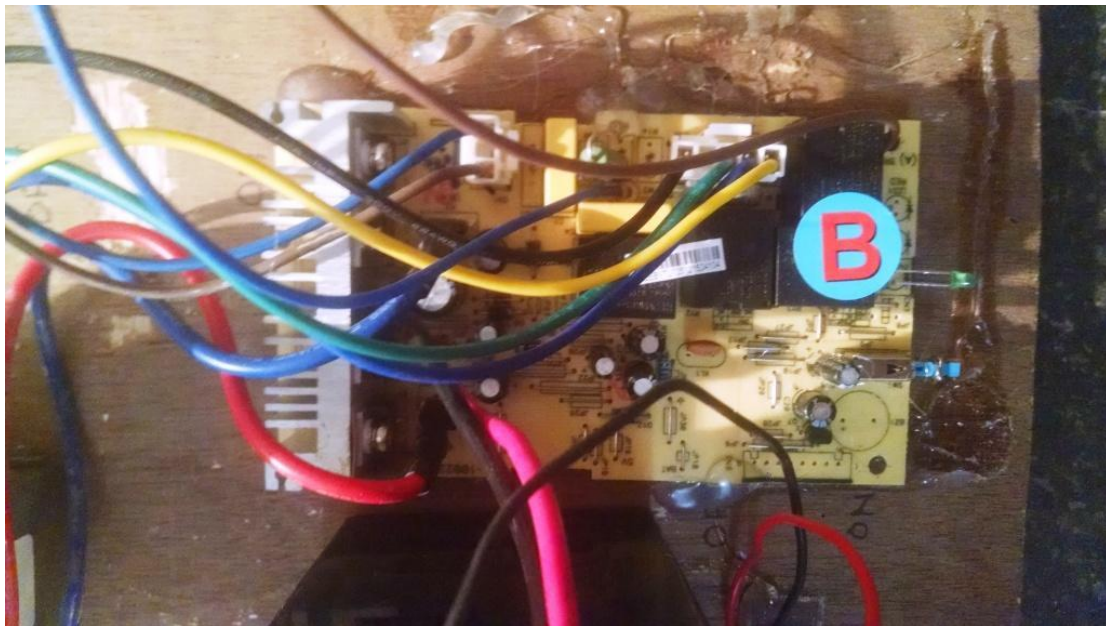


Figure 2: 12VDC to 220VAC Converter

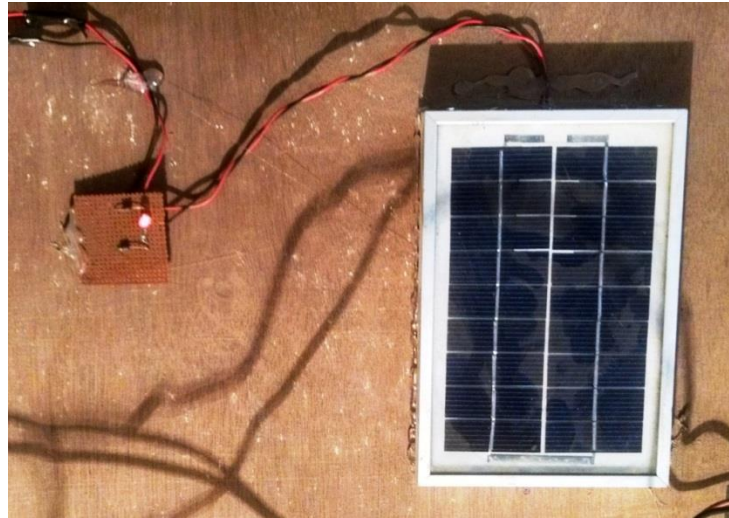


Figure 3: Photovoltaic cells with LED display



Figure 4: 12VDC battery

#### 4. Results

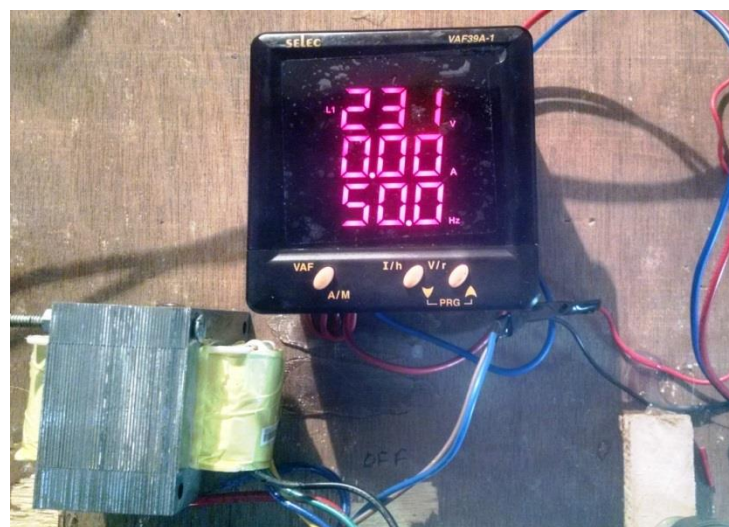


Figure 5: Display of Grid Power

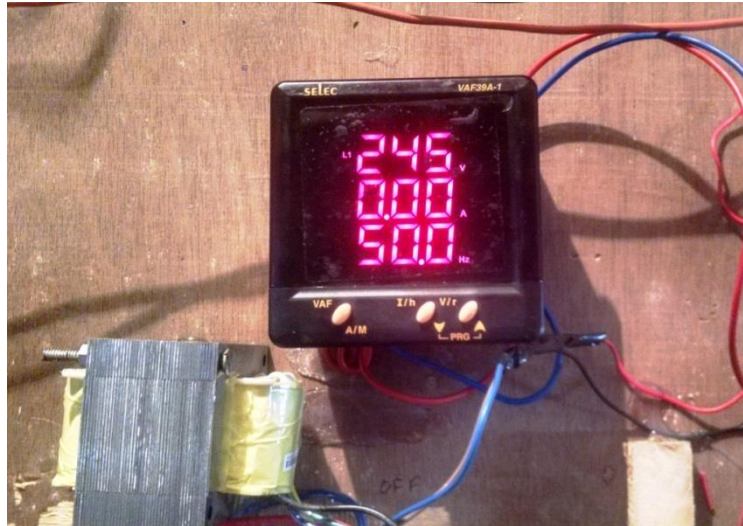


Figure 6: Display of Solar Power

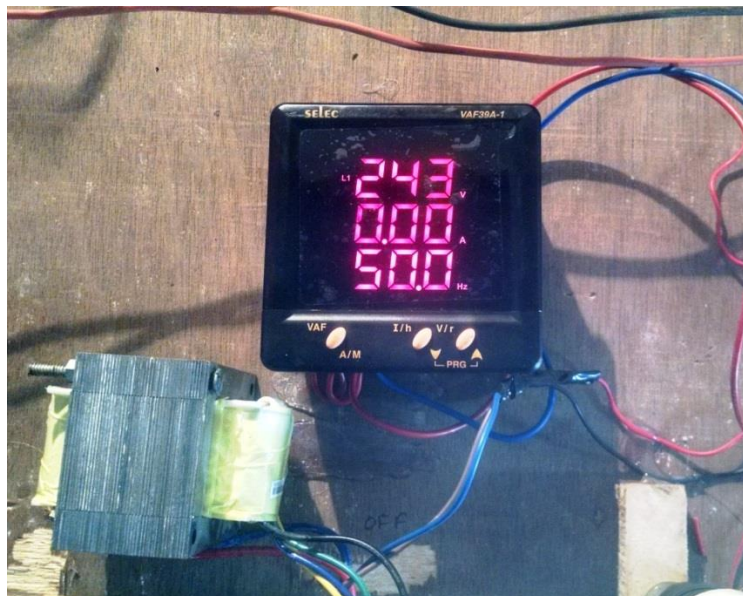


Figure 7: Display of Grid connected solar power system

## 5. Conclusion

We are finding out the 231VAC by Grid power, and 245VAC by solar power . We are obtaining the finally 243 VAC by Grid connected solar power system , in this way we are connected the Solar cells , controller, storage system as battery , inverter,

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