





Condition 3: Duty cycle medium

Condition 4: Duty cycle less

Figure 6.3 show the duty cycle is medium like +48.76 to -51.36 so, duty cycles showing the LEDs taken medium power with medium intensity

Figure 6.4 show the duty cycle is less like +5.76 to -94.36 so, duty cycles showing the LEDs Taken less power with less intensity



Figure 2 High duty cycle with high intensity

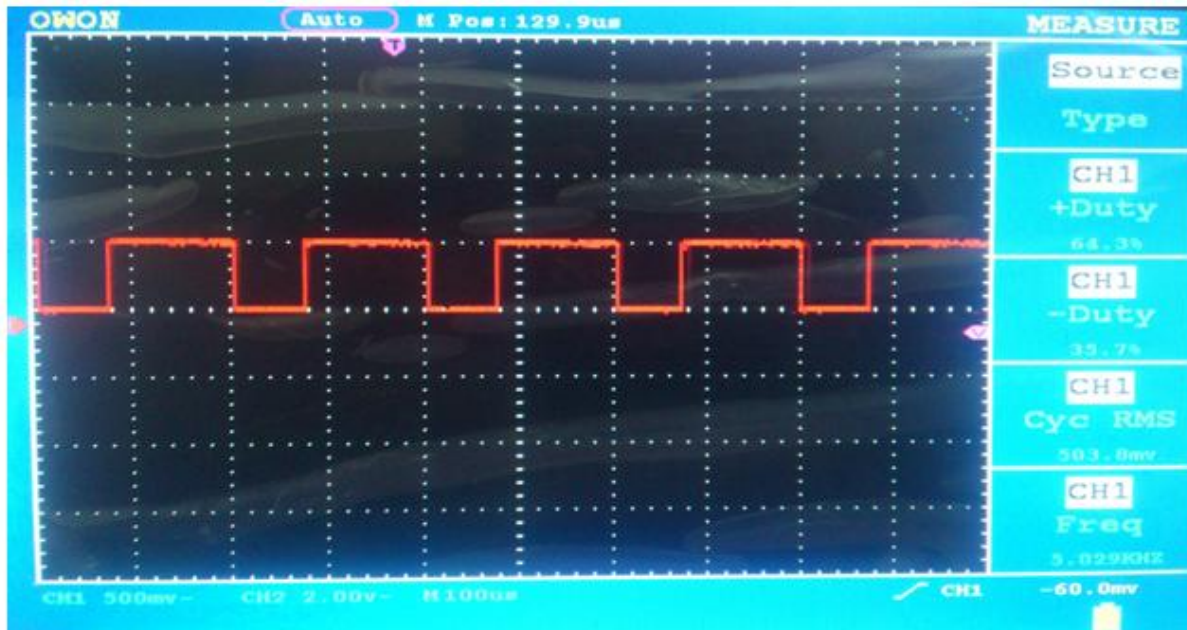


Figure 3 Duty cycle high with high intensity



Figure 4 Duty cycle medium with medium intensity

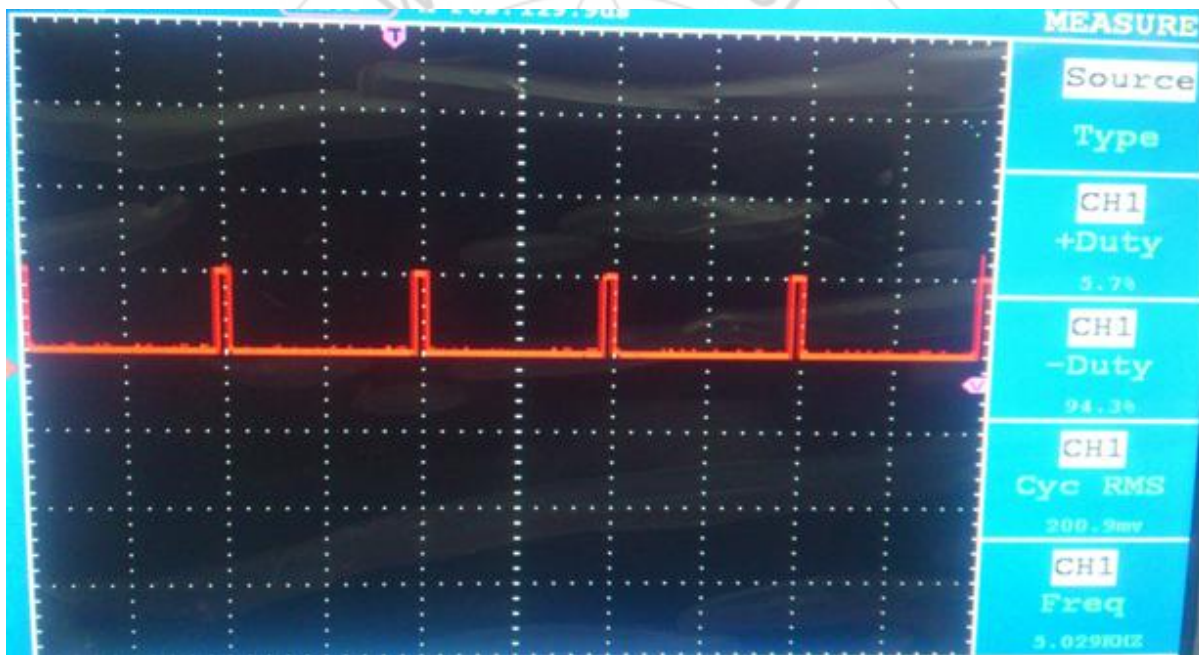


Figure 5 Duty cycles less with less intensity

## 5. Discussion

### 5.1 Solar PV system

Manipulative solar PV systems can be a difficult job for an engineer's especially without more experience with incomplete resources existing that focus on the addition of solar PV systems with the relax of the electrical/mechanical system designing. Batteries are also needed high efficient for the backup and during the insufficient of solar radiation fall on the solar PV module. The detailed study of solar PV module described in the chapter 2 as photovoltaic an overview.

### 5.2 LED technology is comparatively new in the market

LEDs are comparatively new within the lighting markets or industry when compared to most normally available additional light sources as metal halide, incandescent or fluorescent. Discuss about LEDs lighting system in details describe in the chapter 2 as an about LEDs lighting system.

### 5.3 LEDs fixtures are costly

LEDs lights equipment are costly when compared to other light sources such as incandescent, metal halide fluorescent. Simply when the lighting manufacturing is revolutionize with the application of LED's and better efficient LEDs lights equipment are specified in most applications and will the prices go downward.

#### 5.4 Challenges with the DC power

Challenges survive with using DC power for residential and commercial applications such as especially with power sharing in houses and buildings. DC wiring cannot be run for bulky distance and exclusive of significant voltage drop and consequently power loss. For 12VDC system designing and faintly thicker copper wires had to be used i.e. wires had to be upsized to regulate for every wiring losses

#### 5.5 Cost analysis of this system

We have made this system as a prototype of solar PV LED lighting system with all equipments and the predictable cost of this system 10 thousands but if we will use as a home and street lighting system then it will be very high and the predictable cost of home and streets lights like some lakhs with the all equipment.

#### 5.6 Street lighting system

We have made this system with street lights system for road because, we know that in the night more power loss in the street lights today so this system can be controlled the these power losses with the controlling some equipment like microcontroller, IR sensors for ON/OFF street lights system due to movements of any objects on the roads in night time because we can set the timing of only for night automatically with real time clocker. In this street lights system we have used light emitting diodes (LEDs) because it takes less power not more than other lighting source. These street lights are glowing and taking power from solar PV system with battery bank and we have also used solar PV system for the charging of battery and it is a renewable energy sources.

Advantage of solar PV LEDs Street lighting system and compared with the conventional grid street lighting system which is describe in below

- The solar PV LEDs street lighting system consume less power because it has ON/OFF controlling system and the LEDs street lights glowing only night time automatically with any movements on roads in night timing but conventional grid street lighting system take more power not automatically ON/OFF.
- It has long and predictable life time like 10 to 12 years and has lower maintenance cost than the conventional street lighting system.
- Automatically turn OFF/ON with movements
- Some electrical losses

So, all above discussion we have found the results solar PV LEDs lighting system and solar PV LEDs street lighting system are good for new industry, residential, commercial and other application is much better than other lighting sources and we can use solar PV LEDs lighting system for the home appliance, residential, commercial and industrial process because does not takes more power so, it is the best energy efficient lights.

#### 6. Conclusion

Form all above studies we concluded that the solar PV LEDs lighting system is better than other lighting sources because

we can be used this system for home appliance, residential and commercial process with some switching devises and with some controlling equipment, the power performance of this system is good because it does not take more power compared to other lighting equipment and solar PV LEDs street lighting system are better than the other lighting sources because it is automatically ON/OFF due to some switching and electronics equipment in the nights with movements of any objects on the roads so, it does not take more power than other conventional street lighting system.

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#### Author Profile



**Satyendra Kumar Mahto**, He was born in 1990 in Bihar (India) and he is pursuing M.TECH (Dual Degree) from Energy engineering and received B.Tech degree in 2013 from Electrical engineering from Suresh Gyan Vihar University, Jaipur, and Rajasthan, India.