important variable gains which represent the effect of the temperature and solar irradiation levels can be changed by dragging the slider gain adjustments which can be named as variable temperature and variable solar irradiation. In this model, system is designed [4] to supply power to ac type load which is fed through a 3- phase inverter [2]. The block in which the effect of changing temperature and solar irradiation level are designed is called "Effect of Temperature and Solar Irradiation". This block represents the equations as the modification in equations (7) and (8) are as follows.

$$V_{cx} = C_v V_c \tag{9}$$

$$I_{phx} = C_I I_{ph} \tag{10}$$

Experimentally the use of our mirror arrangement placed at different angles [10], the efficiency of the solar panel is increased as compared to the efficiency of the solar panel without the mirror arrangement.

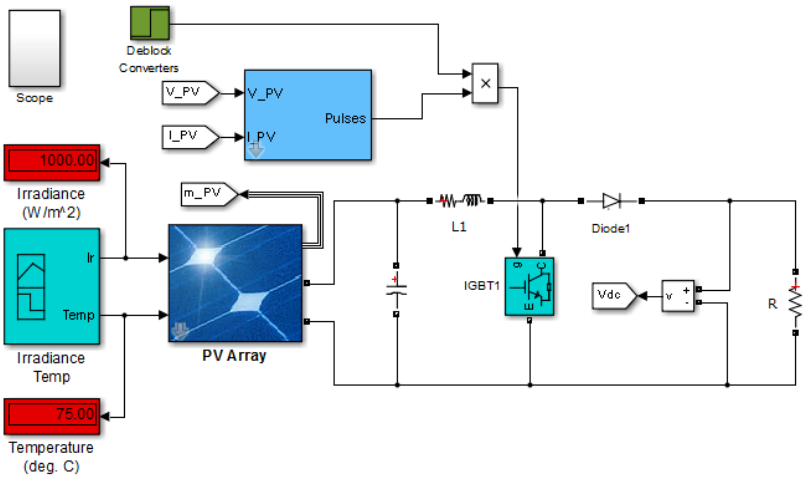

Figure 2: Simulation Model of Solar Panel

Result and Discussion

The proposed model of PVA simulation is shown in Fig.2. The variable input voltage can be stabilizing by regulator, so that a constant supply is passing to the capacitors which are connected in parallel. This regulated system supplies power to the load through the inverter. The loads are chosen such that it can be matched by power generated by the PVA. There is no need of any controller in this type of system. This is important to control the voltage and frequency at ac load bus so that a constant voltage can be supply to the users. By changing the converter's duty cycle, the input voltage which is solar panel's voltage varies accordingly.

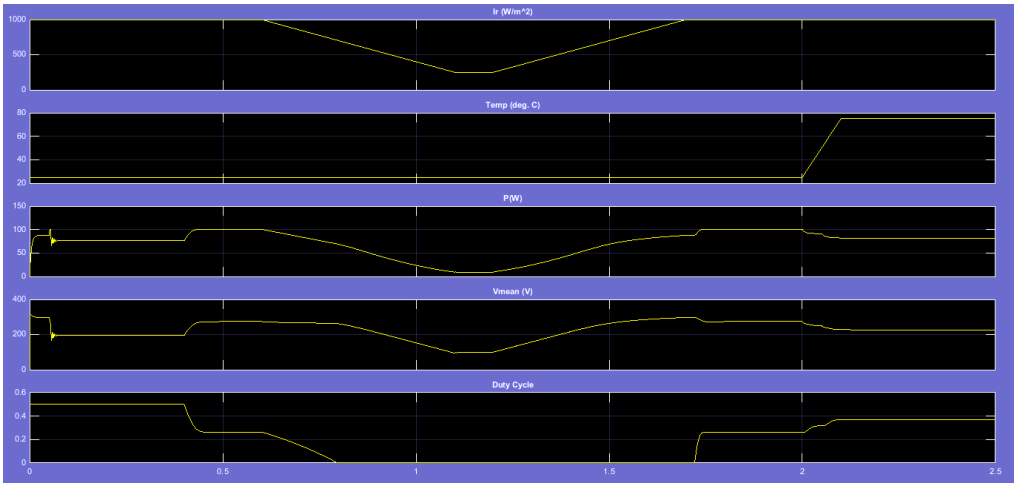

Figure 3: Performance of Solar Panel

The simulation result of PVA during the process is shown in the Fig.3. Due to the effect of the switching and there are some oscillations in the voltage, which is the input voltage of the inverter. As the output ac voltage of the inverter is applied to the load, the effects or change in voltage can be seen in the Fig.3. Where the three phase line to line voltages have sinusoidal wave shapes including some harmonics. Since the voltage of the PVA is equal to the open circuit voltage at stand still, the current-voltage (I-V) characteristics start at open circuit voltage with current equal to zero. As the process starts and the load begin to draw current from PV array, the voltage and current start moving toward the operating values.

On the basis of experimental result I-V characteristic is to be taken by changing the angle position of the reflector [11] and the result is to be shown in the Fig. 4 - 6. The complete arrangement is supposed to be placed at an angle facing the sun, and this can be realized by the use of solar tracker in practical situations [12].

The foil paper is also used in the module to increase the reflections at the corners and at the same time decreasing the heating effect due to rise in temperature. The foil paper is act as a heat sink to reduce temperature on solar panel.

The value of irradiance on the collector is increased by the use of mirrors at different angles. The mirrors are placed at different angles mentioned below:-

Mirror 1 at 125 degrees (±5%).
Mirror 2 at 115 degrees (±5%)
Mirror 3 at 130 degrees (±5%).
Mirror 4 at 115 degrees (±5%).

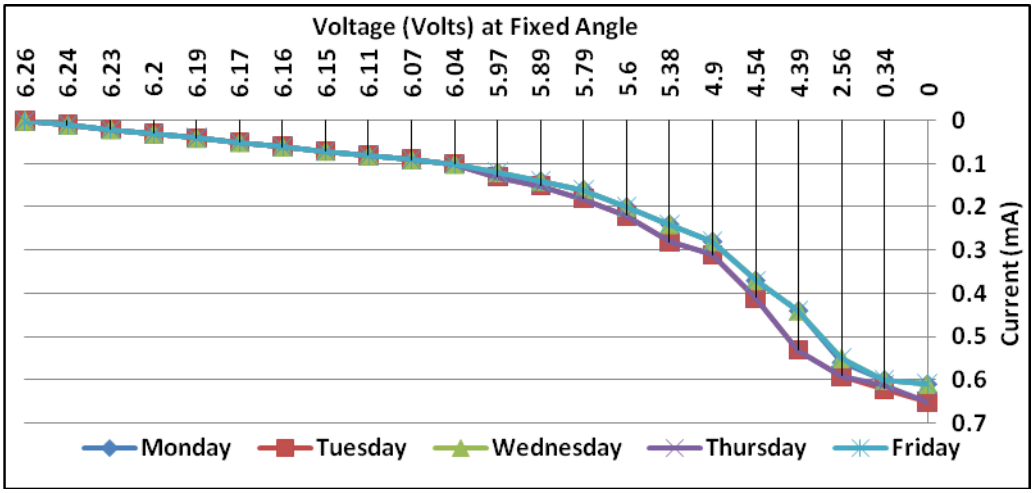

Figure 4: Performance of Solar Panel at Fixed Angle

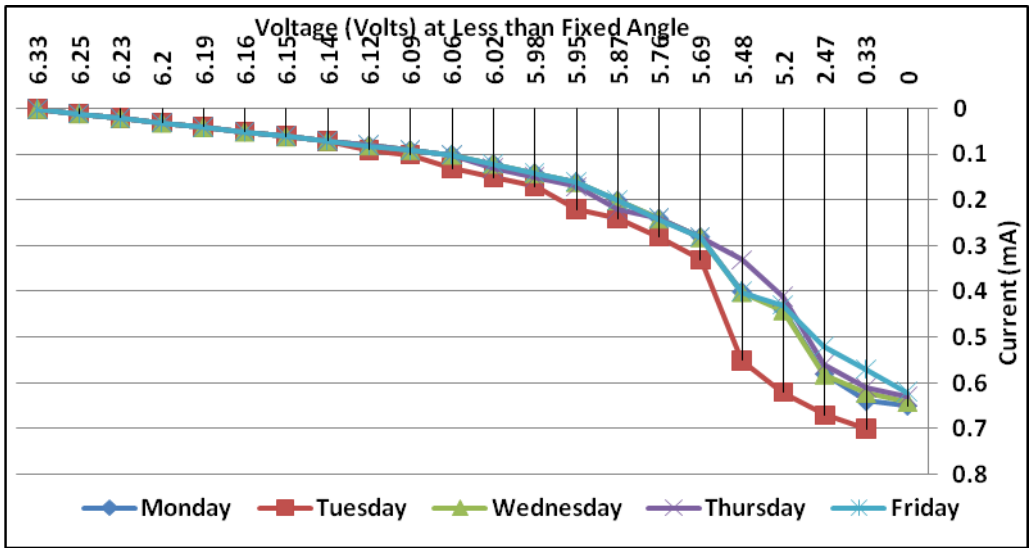

Figure 5: Performance of Solar Panel at Less than Fixed Angle

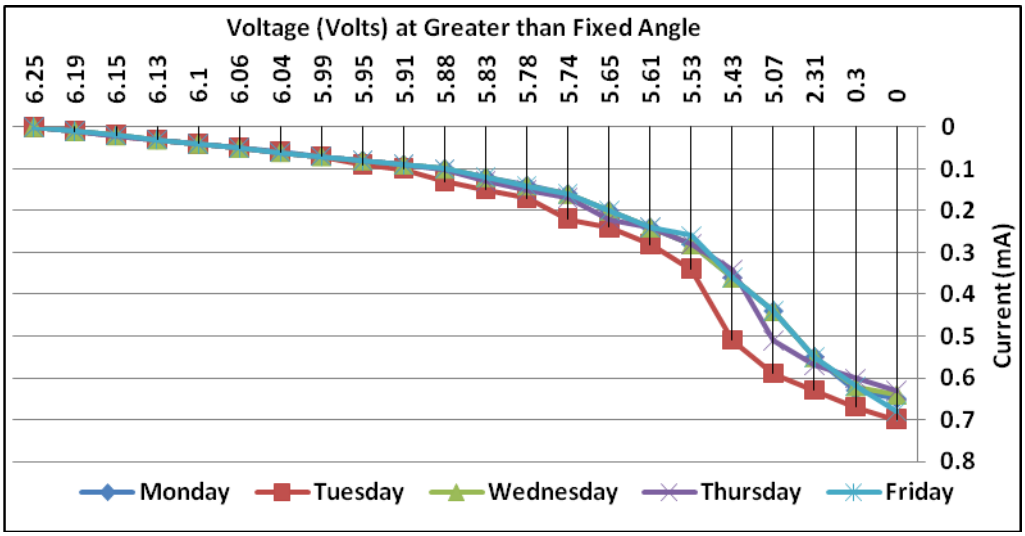

Figure 6: Performance of Solar Panel at Greater than Fixed Angle

The panel efficiency at different angles of mirrors are discussed in Table 1 and their graphical representation are shown in Fig.7. Their performances are shows that efficiency will be varying as mirror angle varied on day by day basis.

TABLE 1: PANEL EFFICIENCY ON DIFFERENT ANGLE

Panel Efficiency at Irradiation = 1000 W/m2			
Days	**Less than Fixed Angle**	**Fixed Angle**	**More than Fixed Angle**
Monday	8.78%	11.72%	8.70%
Tuesday	10.20%	12.18%	9.43%
Wednesday	8.71%	11.31%	8.46%
Thursday	10.42%	12.25%	9.64%
Friday	10.76%	11.96%	7.75%

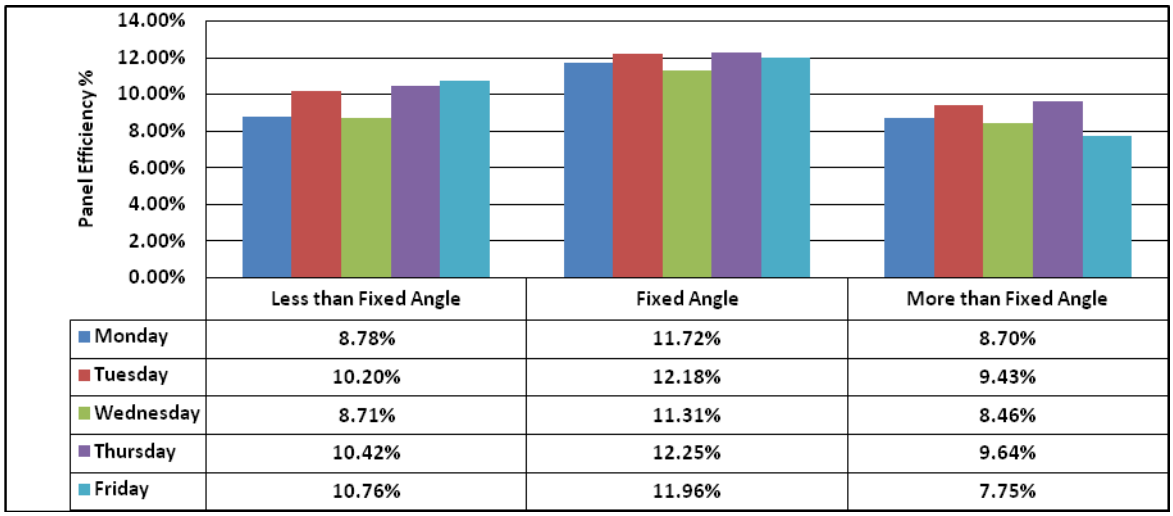

Figure 7: Efficiency of Solar Panel at Variablle Angle

Conclusion

In this paper, the proposed variation in angle of solar cell was used for track of MPP for bifacial solar cell. The model is a compare of I-V characteristics of Solar Panel operation at different angles of the mirror on variable solar irradiation on weekdays. The panel efficiency are By comparing all the information, it is clear that if the bifacial solar cell is used with the proposed model the overall efficiency can be improved and the proposed model is very much economical as compare to implement on normal solar cell.

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