Measurement and Instrumentation Laboratory (EE3P005)

EXPERIMENT-4

Photo Voltaic Cell

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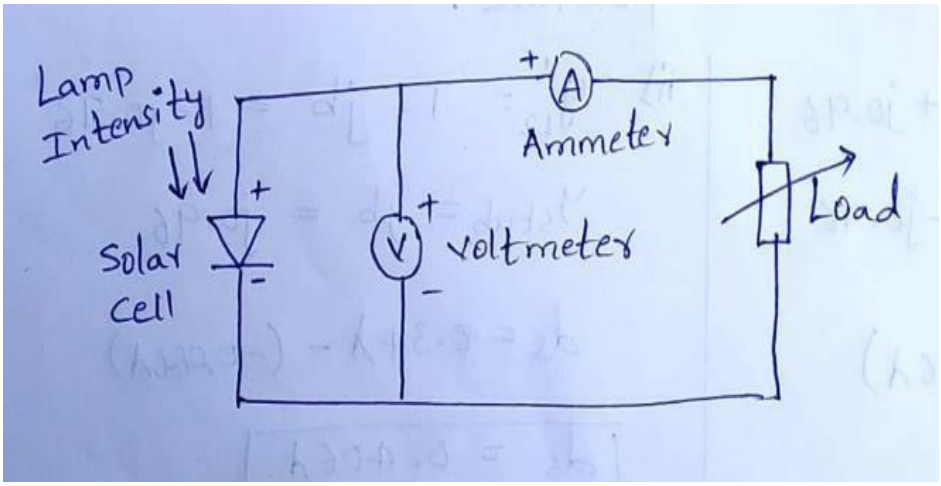
AIM OF THE EXPERIMENT:

To study the characteristics of Solar Photovoltaic Cell, under 4 different light intensities

CIRCUIT DIAGRAM:



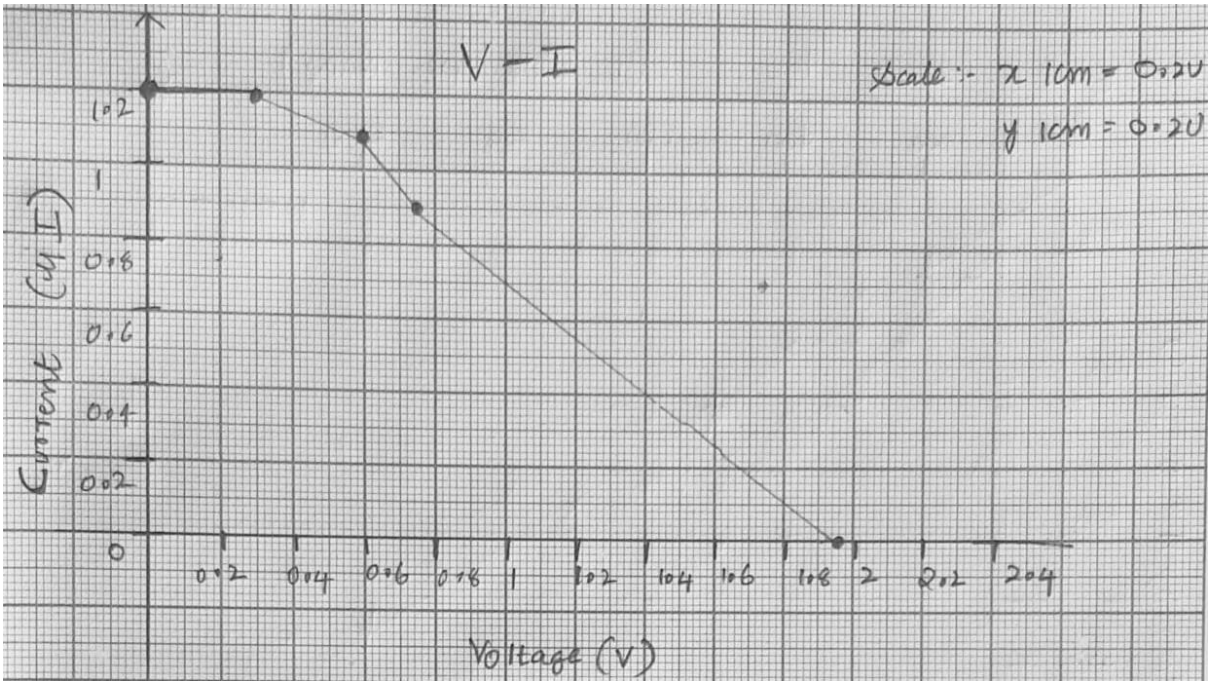
OBSERVATION:

Intensity	Voltage (V)	Current (μI)	Power = V * I (W)
FULL	1.95	0	0
	0.329	1.2	0.395
	0.6	1.1	0.66
	0.738	0.9	0.664
	0	1.2	0
HALF	1.23	0	0
	0.084	0.3	0.0252
	0.167	0.2	0.33
	0.21	0.2	0.42
	0	0.3	0

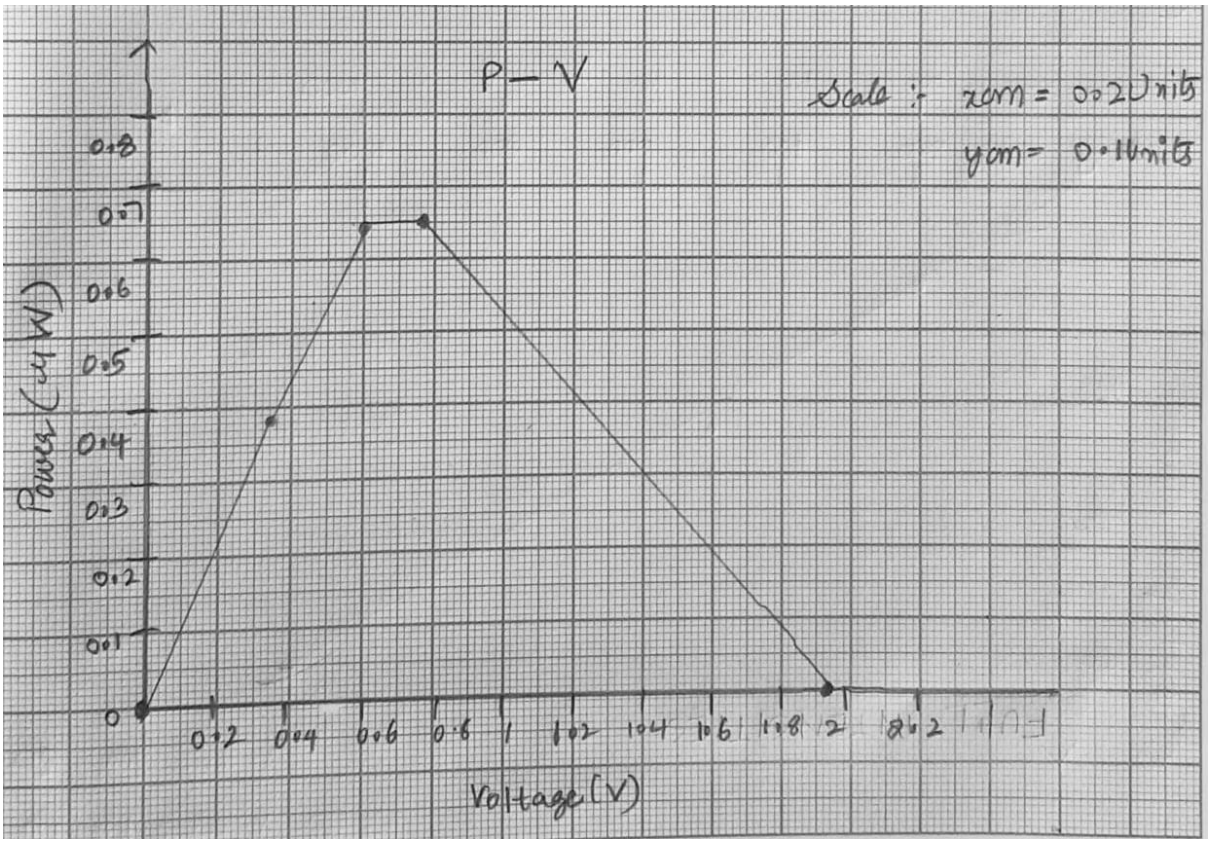
Graph:

1. **Full Intensity: -**

- Current vs voltage:

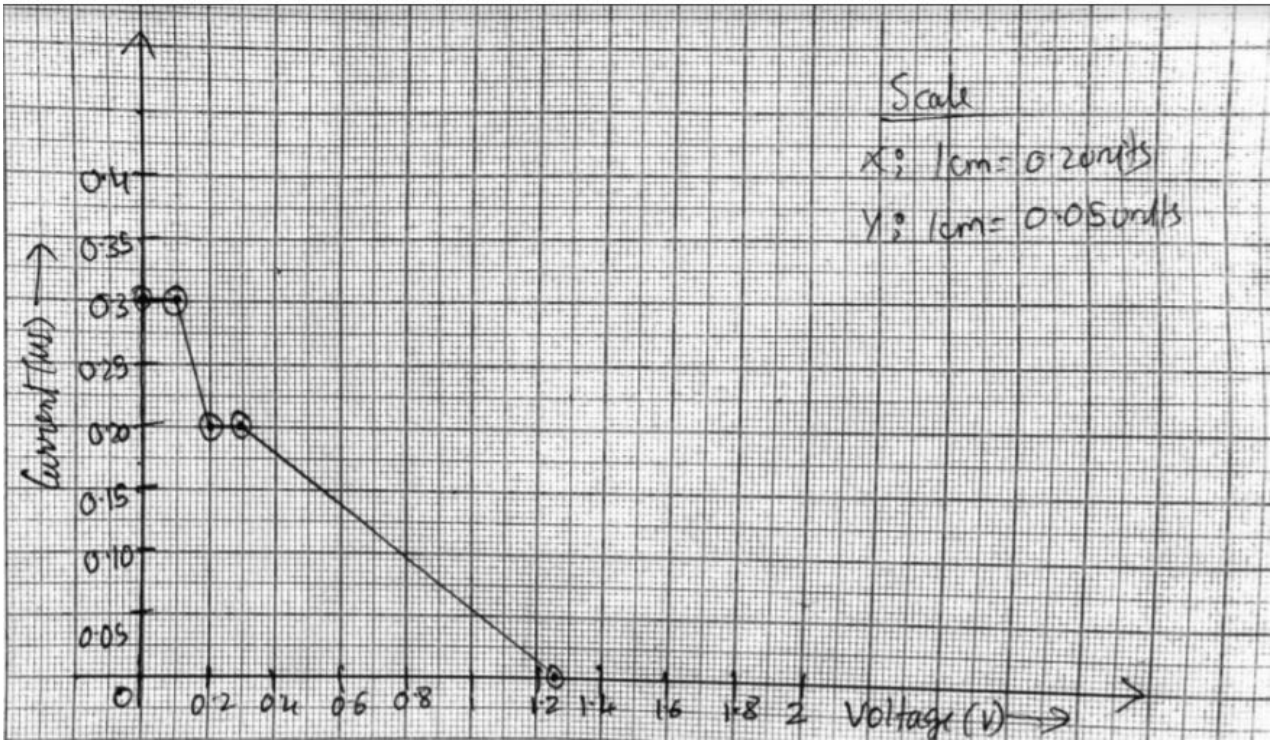


- Power vs voltage:

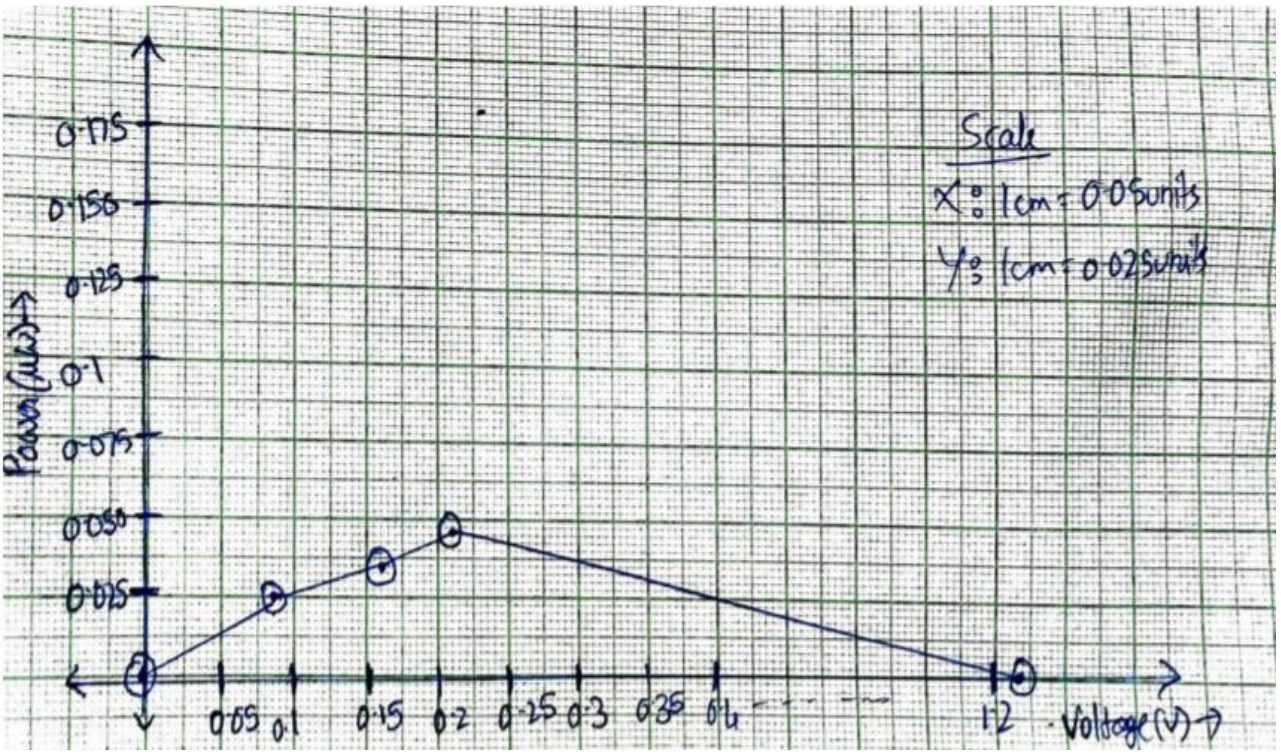


2. **Half Intensity**: -

- Current vs voltage:



- Power vs voltage:



Conclusion

Therefore, we successfully measured the voltages and currents and plotted them as I-V and P-V graphs in each case of Full and Half intensities.

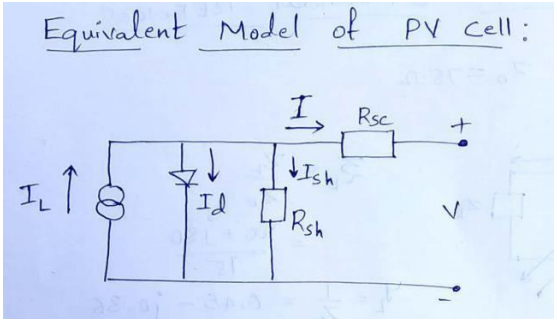
DISCUSSION

1. What is the objective of this experiment?

The Objective of the experiment is:

- To see how current and voltage of photovoltaic cell varies on varying the intensity of light and load connected.
- To study the P-V and I-V characteristics of Photovoltaic cell.
- To study the working principle of Photovoltaic cell.

2. Draw the equivalent model of a PV cell?



3. What are the two meters used in the experiment? Is it possible to interchange them? If not, why?

Two meters used in the experiment are Voltmeter, which is connected in parallel to Photovoltaic and ammeter, which is connected in series to the load. It is not possible to interchange the meters. If we interchange them, the Photovoltaic will get short circuited due to ammeter. And also the connection between the PV cell and load will be lost (open circuited).