INSTRUCTION MANUAL

SOLAR CELL CHARACTERISTIC

OPTIREGION

WP – 56, WAZIRPUR VILLAGE
(NEAR WATER TANK)
ASHOK VIHAR, DELHI - 110052
PHONE: (O) 27426809, (M) 9811900100
FAX NO. 011 – 27116809
E-mail: optiregion1977@yahoo.co.in

OBJECT:

To draw the characteristic of Solar cell (Silicon cell).

APPARATUS USED:

Solar cell fitted on optical bench with two uprights, display unit

THEORY:

Important characteristic of solar cell is:

Variation of photo voltage with varying the flux of incident light (light flux) by varying the distance of the detector from the light source. Since photo voltage is proportional to the flux intensity, variation of voltage can be plotted by recording digital output at different distances..

PROCEDURE:

01. The circuit is shown in figure (1). The Solar cell is mounted on the optical bench. The light from the source is allowed to fall on the solar cell. The digital display is noted at different distances of the solar cell from the light source.
02. Place the solar cell in front of the light source on the optical bench.
03. Now varying distance between light source and solar cell and note the corresponding digital output.
04. Plot a graph between I / d^2 and corresponding digital output as shown in graph.

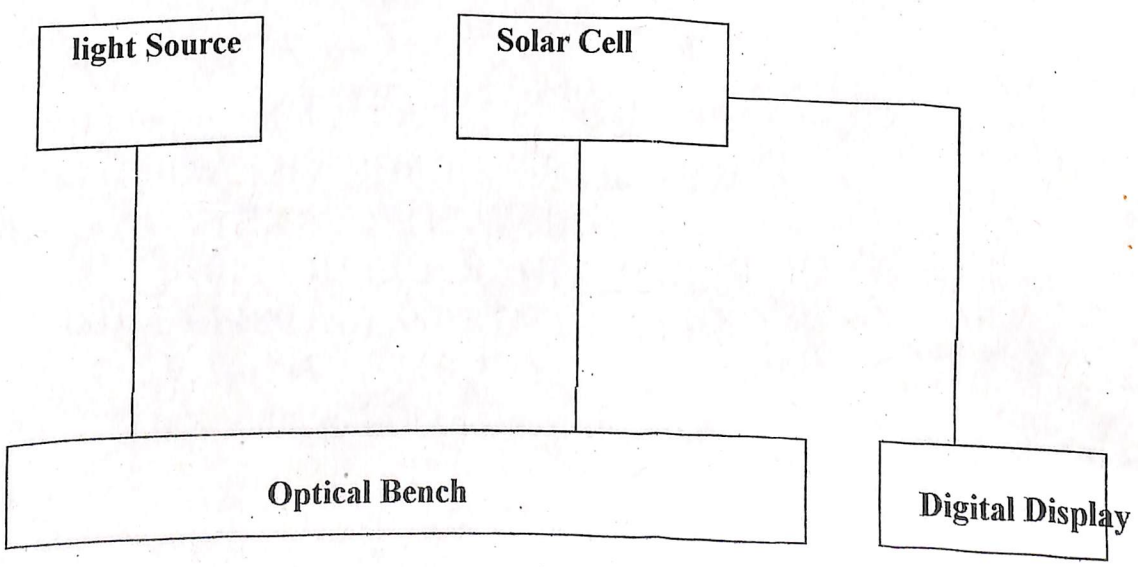

Fig. (1)

OBSERVATION

S.No.	Distance between Source and cell d cm	$1/d2 * 10^{10-3}$	Digital display
1	65	0.237	212.6
2	70	0.304	193.1
3	75	0.78	181.6
4	80	0.156	166.6
5	85	0.138	151.6
6	90	0.123	143.3
7	95	0.111	136.0
8	100	0.100	129.5
9	105	0.097	123.4
10	110	0.083	116.6

RESULT

The digital output against 1/shows a straight line proving inverse square law.

SOURCES OF ERROR ANPRECAUTIONS

01. Sources of light shoube intense so as to give sufficient llight flux.
02. The whole surface oflar cell should be exposed to the imcident light.
03. Experiment should berformed in a dark room.

Dr. Arvind Sabharwal
Principal Investigator
UGC Major Research Project
PG Department of Physics
GSSDGS Khalsa College, Patiala