

## Efficient Use Of Solar Energy

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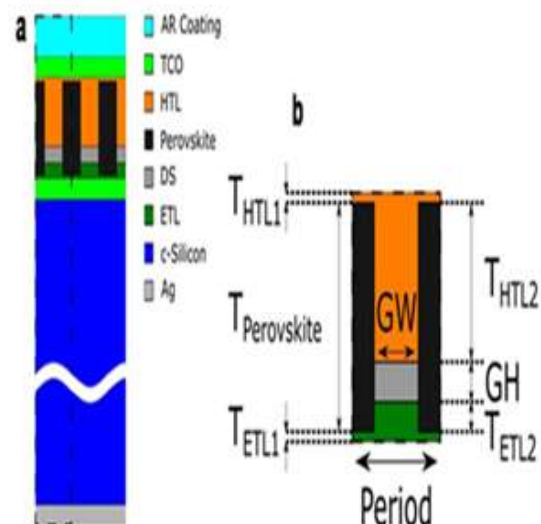
**ABSTRACT**—This paper for the most part centers on expanding the transformation effectiveness of sunlight based cells by permitting the light reflection. The daylight straightforwardly encroaches on the sun oriented board or cells, and afterward a bit of the occurrence daylight reflects back to the air from the surface of the board, along these lines prompting a decrease in the light ingestion limit of the sunlight based cells. To multiply the light ingestion limit of sun oriented cells and make use of mirrored light straightforward glass is utilized, as they are exceptionally equipped for catching the episode daylight and equipped for mirror the light in concentrated territory, which results in creating more electrical energy. In this investigation, we see that utilize both refraction and impression of light. From the trial results, we affirm that that it is conceivable to builds the proficiency of sun oriented energy up to 1% to 3%. By permitting of impression of light assists with improving the transformation productivity of cutting edge sun based cells.

**Keywords**—Solar panel, Reflection, Transparent glass.

### I INTRODUCTION

Sun based energy is the energy gotten by catching warmth and light from the Sun. Energy from the Sun is alluded to as sun based energy. Innovation has given various approaches to use this bountiful asset. It is viewed as a green innovation since it doesn't radiate ozone depleting substances. Sun powered energy is bounteously accessible and has been used since long both as power and as a wellspring of warmth Solar innovation can be comprehensively named – Active Sun based – Active sun based procedures incorporate the utilization of

photovoltaic frameworks, concentrated sun oriented power and sun based water warming to saddle the energy. Dynamic sunlight based is straightforwardly devoured in exercises, for example, drying garments and warming of air. Detached Solar – Passive sunlight based methods incorporate situating a structure to the Sun, choosing materials with great warm mass or light-scattering properties, and planning spaces that normally circle air.



## II. PROPOSED SYSTEM

To defeat the disadvantages of a current framework another arrangement of expanding the proficiency of the sunlight based energy. Sun oriented energy is getting one of the significant energy in the future as an extraordinary environmentally friendly power source. Sun powered cells differ its exhibition under temperature changes. Change in temperature influences the force. The quick improvement of sun powered PV cells has established testing climate later on. Anyway the expense of power from sun oriented PV cells is as yet a few times higher than the ordinary force age. So it is extremely important to improve the productivity of the sunlight based PV cells. Proficiency can be expanded either by changing PV material, concentrating sunlight based beams or utilizing sun oriented global positioning framework. Proficient of utilization of sun powered energy utilizing Snell's rule, ordinarily we utilize sunlight based energy in numerous application like businesses, agribusiness and so forth Contribution of this venture is straightforward however yield of this venture is extraordinary.

Accept that normally 300 watts sun oriented board produce 2.5 kilowatts-hour out of each day. Utilizing this venture we can create more than typical once. In this venture we are utilizing Snell's law "Snell's law expresses that the proportion of the sine of the points of occurrence and transmission is equivalent to the proportion of the refractive list of the materials at the interface. In that we going place typical straightforward glass in the middle of sun and sun powered board, due to setting straightforward glass the daylight first falls on straightforward glass, here two cycles going held one is refraction and another is reflection.

First we examine about refraction when the daylight is fall on the straightforward glass it will refract through the glass and fall on the sunlight based board now sun based board will deliver current naturally. Second we going to examine about reflection when the daylight is fall on the straightforward glass. It will mirror the daylight from the glass now we going to put another piece of sun oriented board where the light get reflected in this spot we need to recollect a certain something about reflection, when the light get reflected it move extra 10% warmth because of this when we place another piece of sun powered board in the reflection way of light that another piece of sun based board will get light energy with 10% additional warmth as the consequence of additional warmth yield of the that sun powered board will increment ,altogether for a manageable green Earth.

The below diagram clearly explain about the proposed system and the output of the proposed system is mentioned below thw block diagram

Here we take two solar panels each panel have capacity to produce 20 volts And the output is taken at different intervals

### III. BLOCK DIAGRAM

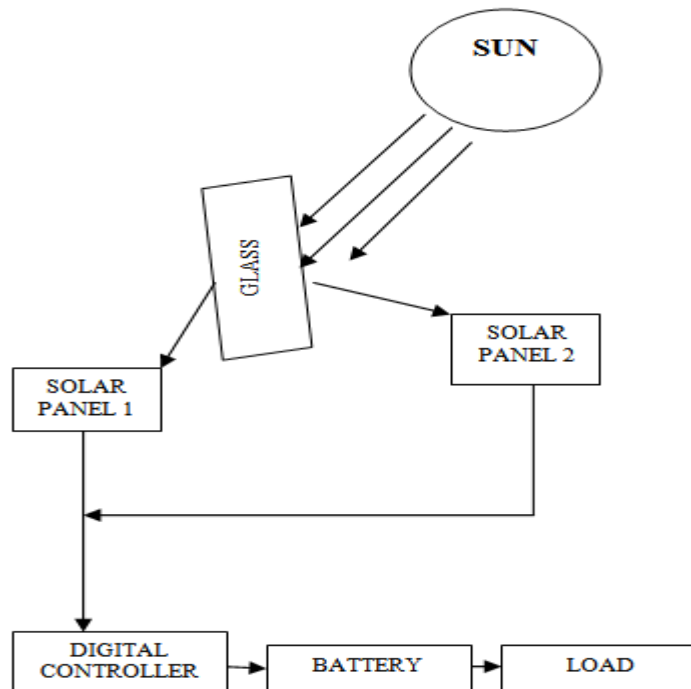


Fig.No.1 Block diagram of proposed system

### IV. OUTPUT

Output for refraction:

S.NO	REFRACTION TIME	WITHOUT GLASS	WITH GLASS
1	11.00 am	17.00 v	17.00 v
2	12.00 pm	19.00 v	19.00 v
3	01.00 pm	20.00 v	20.00 v
4	02.00 pm	20.00 v	20.00 v

Table No.1.output of refraction

Output for reflection

S.NO	REFLECTION TIME	WITHOUT GLASS	WITH GLASS
1	11.00 am	17.00 v	18.00 v
2	12.00 pm	19.00 v	20.00 v
3	01.00 pm	19.00 v	20.00 v
4	02.00 pm	20.00 v	20.00 v

Table No.2.output of reflection

### V. CONCLUSION

This work sums up the investigation of productive utilization of sun based utilizing Snell's guideline. In specific, we investigate the impression of light beams. This investigation gives wide scope of both refraction and impression of sun beams. This procedure delivers more energy than ordinarily energy created by sun oriented. We can utilize this procedure to ventures like were power is more required. Sun oriented force is a massive wellspring

of straightforwardly useable energy and at last makes other energy assets: biomass, wind, and hydropower and wave energy. The greater part of the Earth's surface gets adequate sun based energy to allow second rate warming of water and structures, despite the fact that there are huge varieties with scope and season. At low scopes, straightforward mirror gadgets can focus sun oriented energy adequately for cooking and in any event, for driving steam turbines. The energy of light moves electrons in some

semiconducting materials. This photovoltaic impact is prepared to do enormous scope power age. In any case, the current low effectiveness of sun based PV cells requests extremely enormous regions to supply power requests. Direct utilization of sun based energy is the lone sustainable methods prepared to do eventually displacing current worldwide energy supply from non-inexhaustible sources, however to the detriment of a land territory of in any event a large portion of 1,000,000 km<sup>2</sup>. By putting fabry perot depression channels in the spot of straightforward glass we will improve power than straightforward glass in remuneration of scattering and builds the productivity of the sunlight based board.

### REFERENCES

- [1]. Andreev, V.M. (2012) GaAs and High-Efficiency Space Cells. In Chapter-1, Practical Handbook of Photovoltaic Fundamentals and Applications, second ed.; Academic Press: Cambridge, CA, USA; pp. 399–416.
- [2]. Buitenhuis, A.J.; Pearce, J.M.(2012)Open-source improvement to sunlight based photovoltaic innovation. Energy Sustain.Dev. 16, 379–388
- [3]. Davies, J.; Joglekar, N. (2013) Supply chain coordination, item measured quality, and market valuation: Evidence from the sunlight based energy industry. Goad. Oper. Manag. 22, 1494–1508
- [4]. Gangopadhyay, U.; Jana, S.; Das, S.; Ghosh, P.; Mondal, A.(2013) Anti-intelligent nanocomposite based covering for translucent silicon sunlight based cells with notice capable importance. J.Renew. Support. Energy, 5,031607
- [5]. Mandal,Sharma,S.(2016) Progress in plasmonic solar cell efficiency improvement: A status audit. Re-establish. Maintain. Energy Rev, 65, 537–552
- [6]. Nur-E-Alam, M.; Vaseline, M.(2020) Transparent Solar Windows: From Labs to Industry, Towards Smart Cities. Reference book