



EVERYONE SHOULD HAVE SOLAR PANELS

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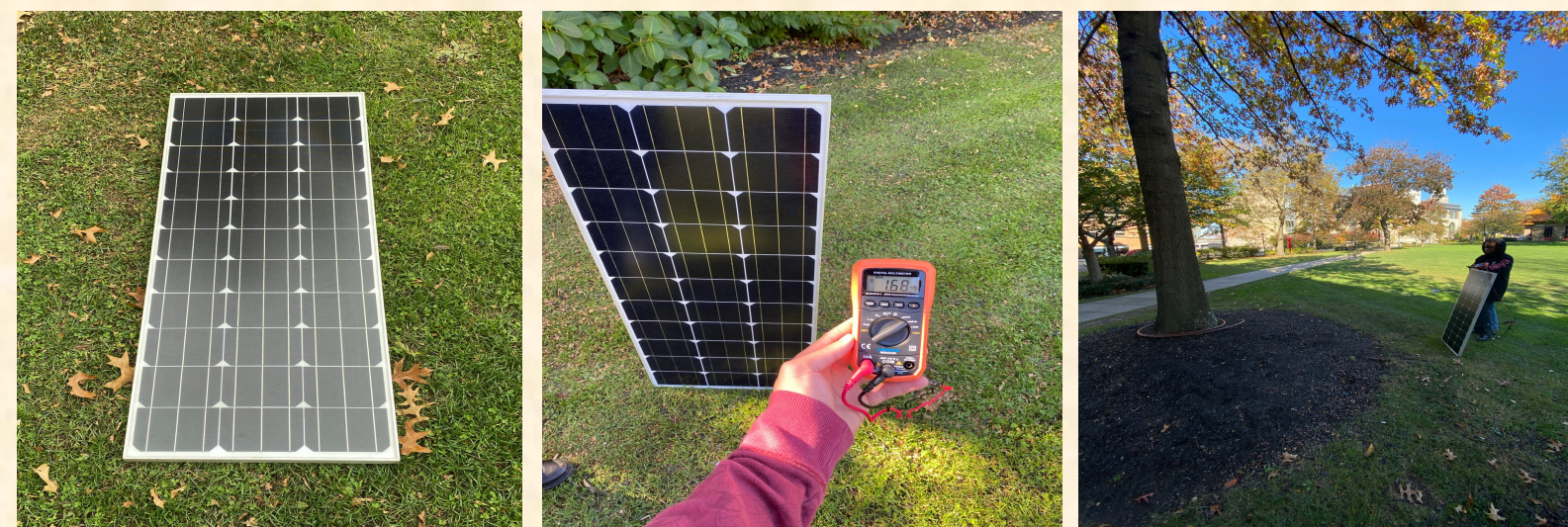


Abstract

Everyone should have solar panels because it produce less carbon dioxide, greenhouse gases, and pollution in the air. Getting solar panels can be expensive but the great advantages of it is great, everyone don't have to spend a lot of money for electricity bills, gets its energy from the sun to make electricity work, and it lasts for a long period of time. In our society of physics students (SPS), we built a small solar panel that can fit and store more solar energy from the sun. Also, solar panels can be placed on various angles because the sun can move in different places.

S.P. Procedure

- For the solar energy, we had to test the solar panel's mV, mA, and W/m^2 for both in the shadow and in front of the sun with the solar panel and doing multiple trials.



- Getting our data reading from our solar panel.



- Collecting our readings in a table from both in the sun and in the shadow.

| Big panel | mA | mV | W/m^2 |
|-------------------------------------|-------|-----|---------|
| Reflected off a dark surface | 1.01 | 0.2 | 0.5 |
| Reflected in sunlight dark surface | 22.3 | 0.1 | 1.2 |
| Normal in sunlight | 16.08 | 0.2 | 2.8 |
| Vertical in sunlight | 25.4 | 0.1 | 0.5 |
| Horizontal in sunlight | 32 | 0.1 | 3 |
| Reflected in sunlight light surface | 2.2 | 0.1 | 4.8 |
| heated 100.4 degrees F | 30.3 | 0 | 3.8 |
| Water 93 degrees F | 31.3 | 0.1 | 0.4 |

Solar Panel

- Solar energy takes more energy when there is a presence of the sun that hits and takes the energy to form electricity flow in power the kitchen, TV, lights, computers and more than in Winter season.

Reference



INTRODUCTION

- When the sun shines onto a solar panel, energy from the sunlight is absorbed by the PV cells in the panel.
- This energy creates electrical charges that move in response to an internal electrical field in the cell, causing electricity to flow.

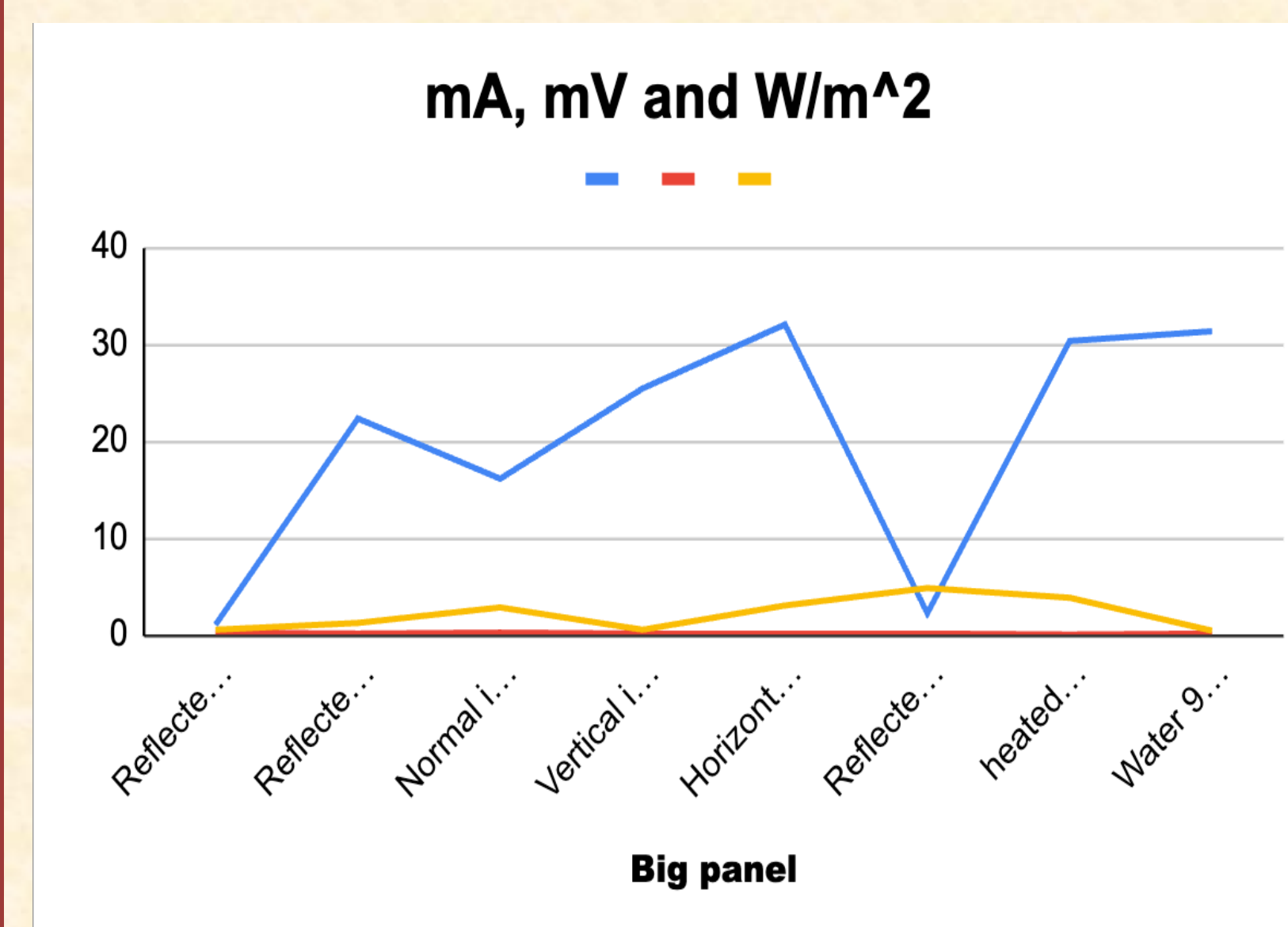
Reference



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Comparison

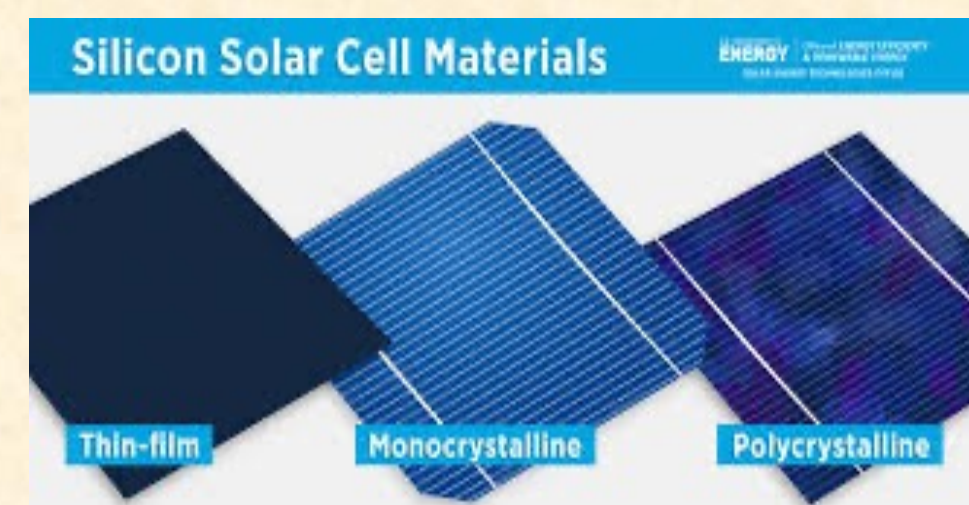
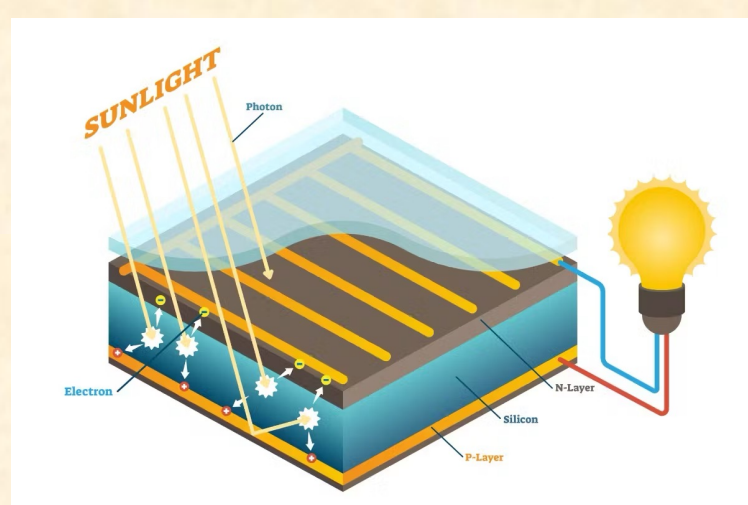
- According to the data on the graph, it shows that the mA (milliamperes) somehow decrease and increase massively while mV (millivolts) stays the same and W/m^2 (Watt per meter squared) is increase and decrease but lesser than the mA



Solar cells

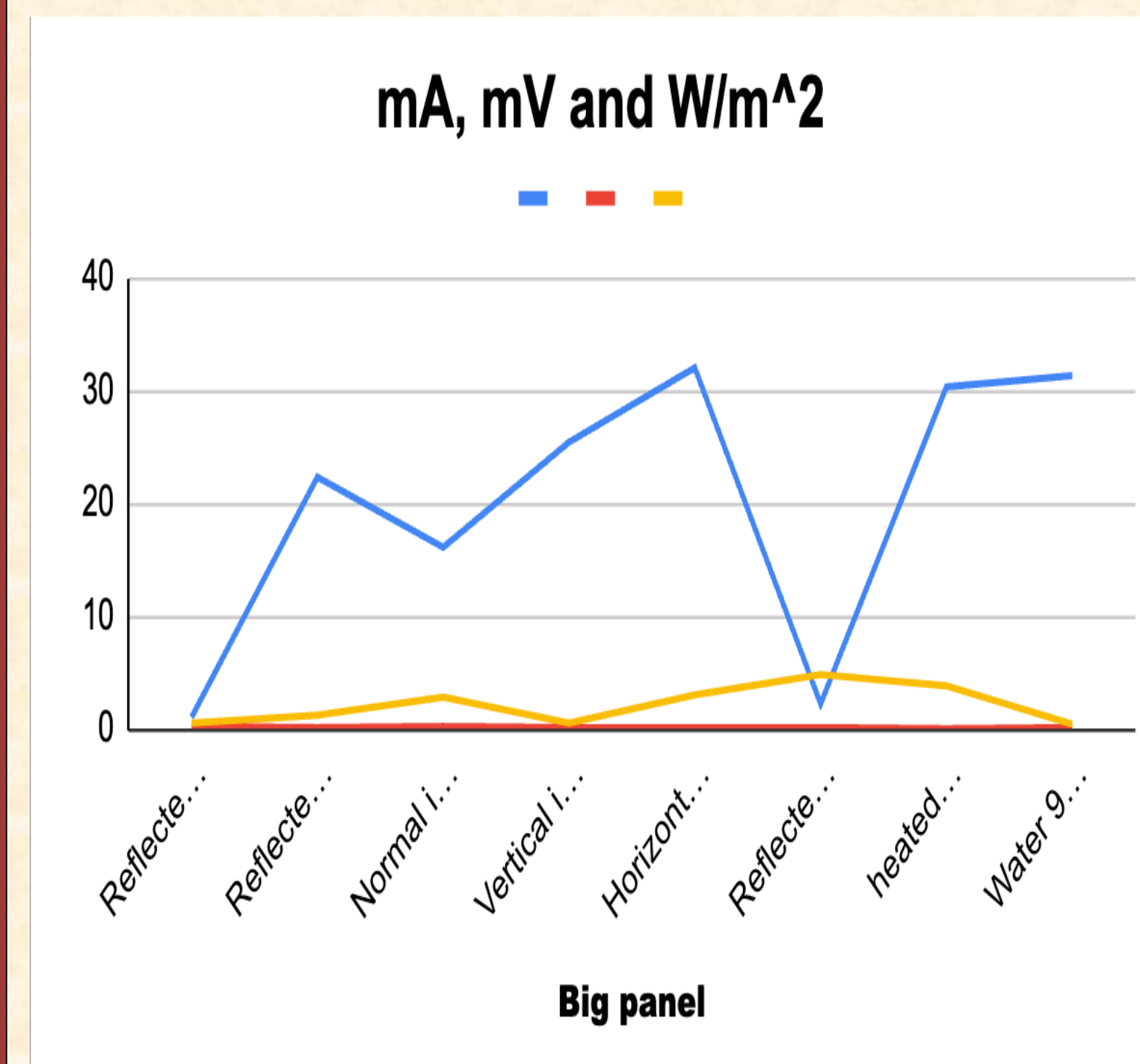
- The layers of the solar panels are built with materials of thin-film, monocrystalline, polycrystalline which are silicon solar cells.
- It also takes its energy from sunlight, and converts it into electricity to power everything that is inside any places, homes, work buildings etc.

References



Solar Energy and results from a graph

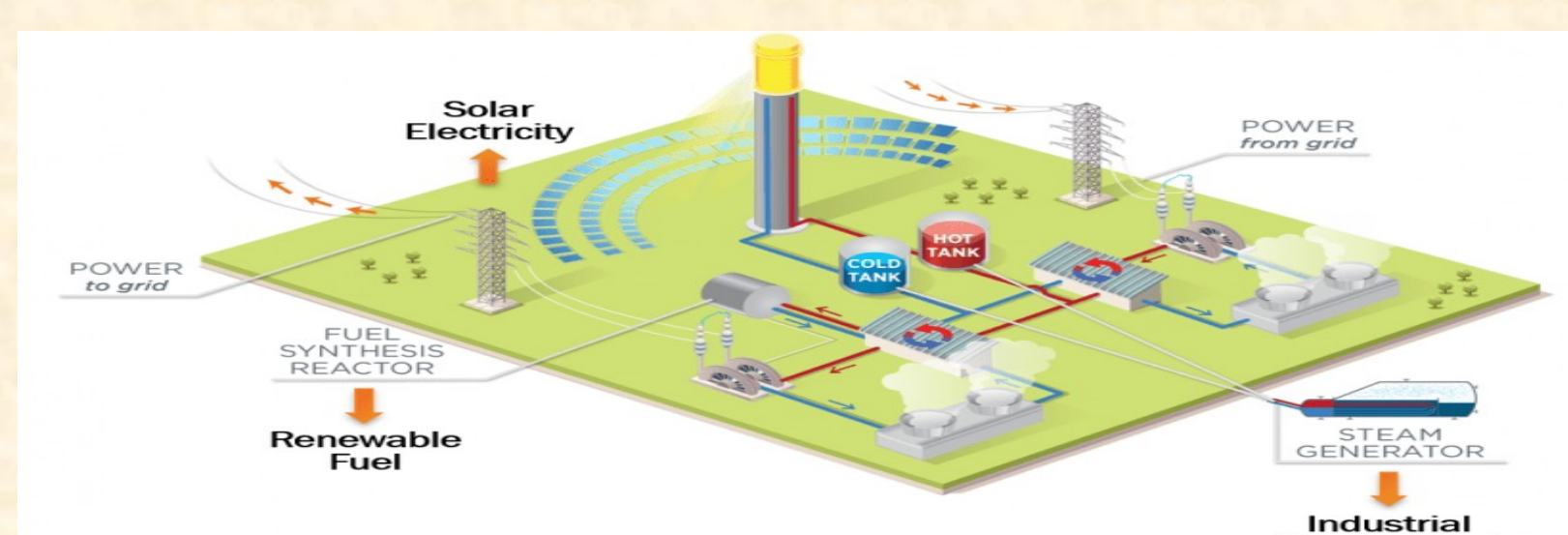
- Having solar energy during summer and spring times with the sun hits the solar to create electricity in the house.
- But during winter times, solar panels takes less energy from the sun.
- Solar energy can be placed more when the sun hits directly to it than when it's placed in a shadow based on the data.



Scientific Motivation

- The solar energy uses a scientific term photovoltaics (PV) and concentrating solar-thermal power (CSP) to power the solar energy-use mirrors to reflect and concentrate sunlight onto a receiver. The PV takes energy from sunlight and forms it into electricity to make it flow.

Reference



Summary & Observations

- It is encouraging to have solar panels everywhere to protect Earth in reducing the large amount of greenhouse gases in the atmosphere.
- Economically, the best advantages of getting solar panels will help everyone not waste money on paying electric bills
- It gets enough power for all seasons whether it is hot or cold weather to keep the building in good condition.

This research is funded by Physics Department, St. John's University