

## What is solar power

### Generation

Power generation system that converts solar light energy into electricity using solar cells.

☀️ It is earth-friendly compared with thermal power generation etc.

### Purpose of the experiment

Solar panels are not used much in Hirosaki.

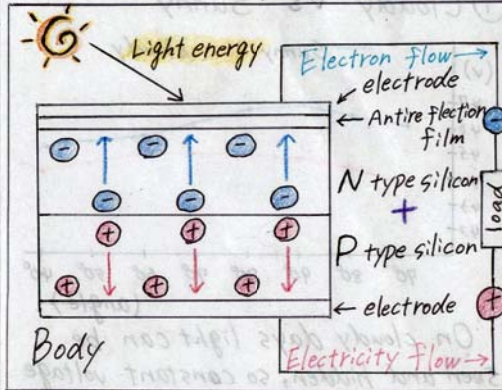
#### Q Why?

1. It is expensive.
2. Climate problem



So, we wanted to find a panel suitable for Hirosaki's environment.

## How the solar panel works



(Direct current)

- Solar panels combine two objects that flow electricity only in a given direction into a single panel.
- N-type silicon carries negative electricity, and P-type silicon flows positive electricity.
- Electricity flows from P-type silicon to N-type silicon.

✳️ Some solar panels are united into one.



# Solar Power

16 HR Group 1

Name: ☺️

# Experiment

<comparison> electric-generating capacity

- ① The difference between cloudy weather and fair weather
- ② The difference of incidence by angle's change

<experimental device>

- Solar panel

\* We can bend it.



We set the same area.



Single Crystal type

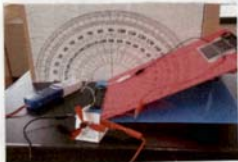
amorphous type

75mm x 50mm

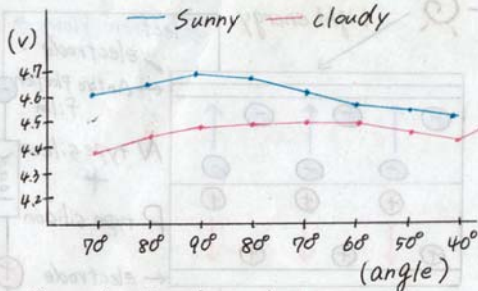
110mm x 6.5mm

- Protractor
- voltage measuring instrument
- Clip board
- motor

we set level place. Measured electric-generating capacity while adjusting the angle at which sunlight hits the clipboard.

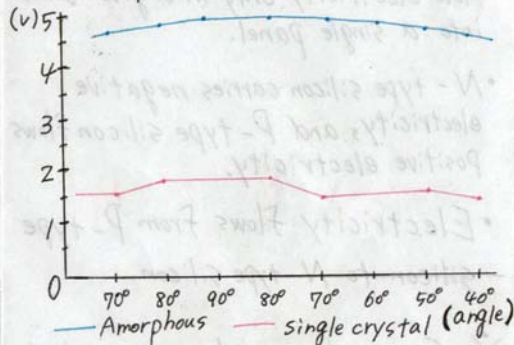


## ① Cloudy vs Sunny



On cloudy days light can be seen and hidden, so constant voltage can not be obtained.

## ② Amorphous vs Single crystal



Amorphous can obtain more stable voltage than single crystal.

# Summary

<result>

- Electric generation capacity is max when putting a panel at a right angle to the sun.
- Amorphous can obtain more stable voltage than single crystal.



From this result, we thought that amorphous is more suitable for power generation than single crystal.

## Facilities in Hiroasaki



- This is grouping one by one so that it can be used even if snow falls.
- There is little influence from snow cover.
- Power generation efficiency is affected by temperature.
- Even if there are no people on the spot, you can check the state with a surveillance camera.