Double concentrated solar power

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Abstract - **For as long as the Sun blazes we are in position to tap light and heat when it shines in our direction. we can use solar power in two very different ways electric and thermal but my experiment is based on solar electric power or active solar power means taking sunlight and converting it to electricity in solar cells. This technology is sometimes also referred to as photovoltaic. Photo means light and voltaic means electricity, so photovoltaic simply means making electricity from light.**

I. INTRODUCTION

For as long as the Sun blazes we are in position to tap light and heat when it shines in our direction. we can use solar power in two very different ways electric and thermal but my experiment is based on solar electric power or active solar power means taking sunlight and converting it to electricity in solar cells. This technology is sometimes also referred to as photovoltaic. Photo means light and voltaic means electricity, so photovoltaic simply means making electricity from light.

II. CONCEPT

In this solar project we generate electricity with the help of solar radiation. For this firstly, we construct photovoltaic plate and connect its wire to the panel as per diagram. When the sunrays fall on cells of solar panel then electricity will be generated with the help of semiconductor. In the shown diagram the construction of one cell design is explained.

Now see the given diagram of one cell design. In this system firstly the sunrays passes through a glass made of lens and strike the surrounding glass film of semiconductor. Few sunrays are absorbed at walls of semiconductor which will generate electricity and the remaining sunrays will be transferred through the lens to the layer of semiconductor which is situated below the lens. The lens will increase the intensity of sunrays. Due to increase in intensity of sunrays by lens on striking semiconductor, the generation of electricity is definitely be increased. The film of semiconductor and below placed thick lens will also maximize the generation of electricity, as we can see in side view of one cell diagram. As you can see in top view of diagram, the special arrangement of the surrounding walls of semiconductor and the bottom semiconductor will increase the generation of electricity.

Since this is a phenomenon of cell, therefore if this is the construction of entire panel the efficiency of generating electricity of solar plate is increased to 70%-75% and the same amount of area by use of this technology there will be more generation of electricity in comparison to the other solar panel.

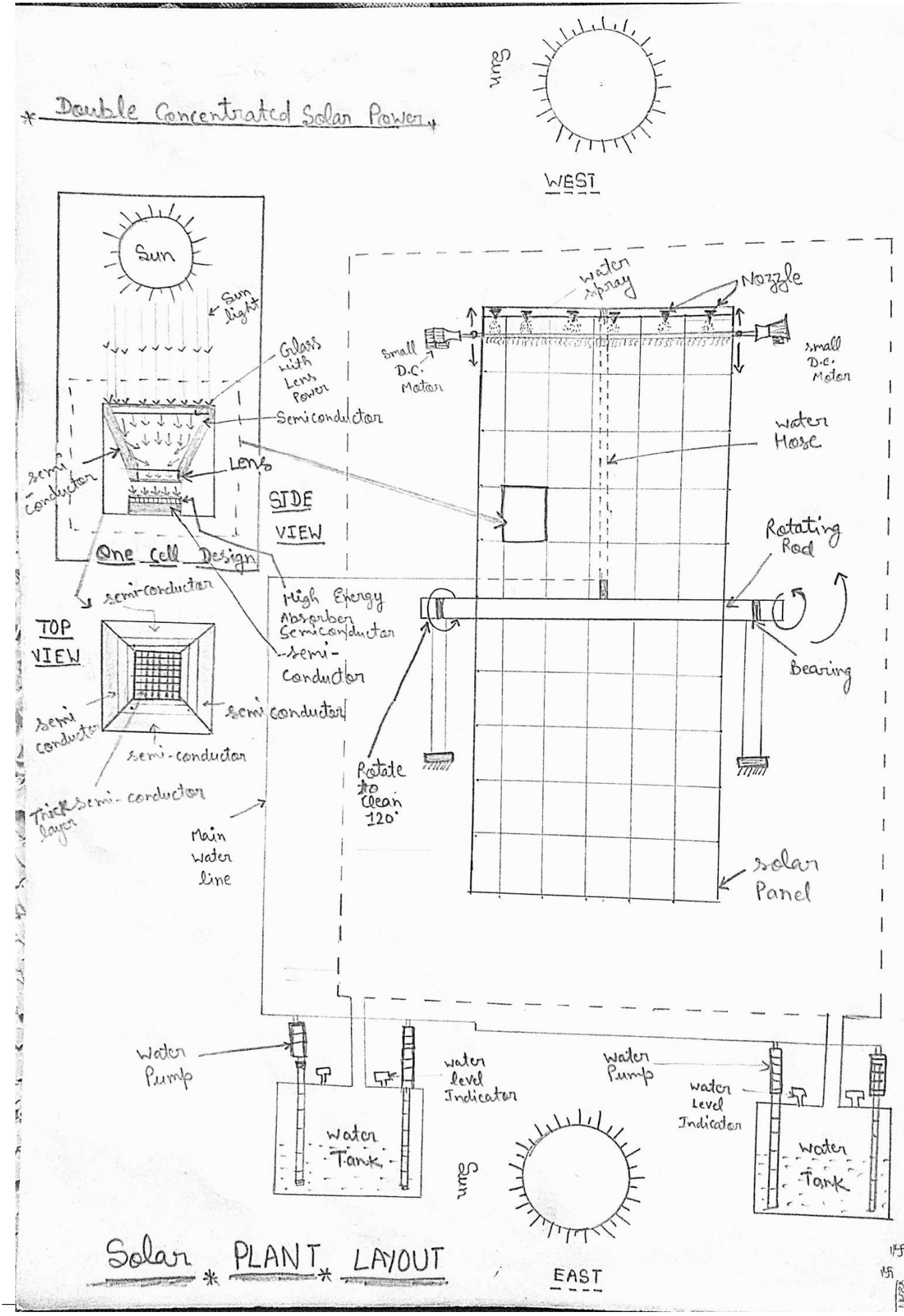
Initially, we will connect the solar panel to weather station. In weather station we have pyrometer which help in tracking and a device for wind speed is also connected which will show the reading of monitor. The pyrometer will track the angle of D.N.I (Direct Normal Irradiation) and send the signal to D.C.S. and further D.C.S will forward the signal to solar panel by which the solar panel will rotate in direction of sunrays angle and on bearing the solar panel will move from east to west easily. The solar plate used in this system is better and will generate much more electricity as the sunrays will fall perpendicularly on the semiconductor.

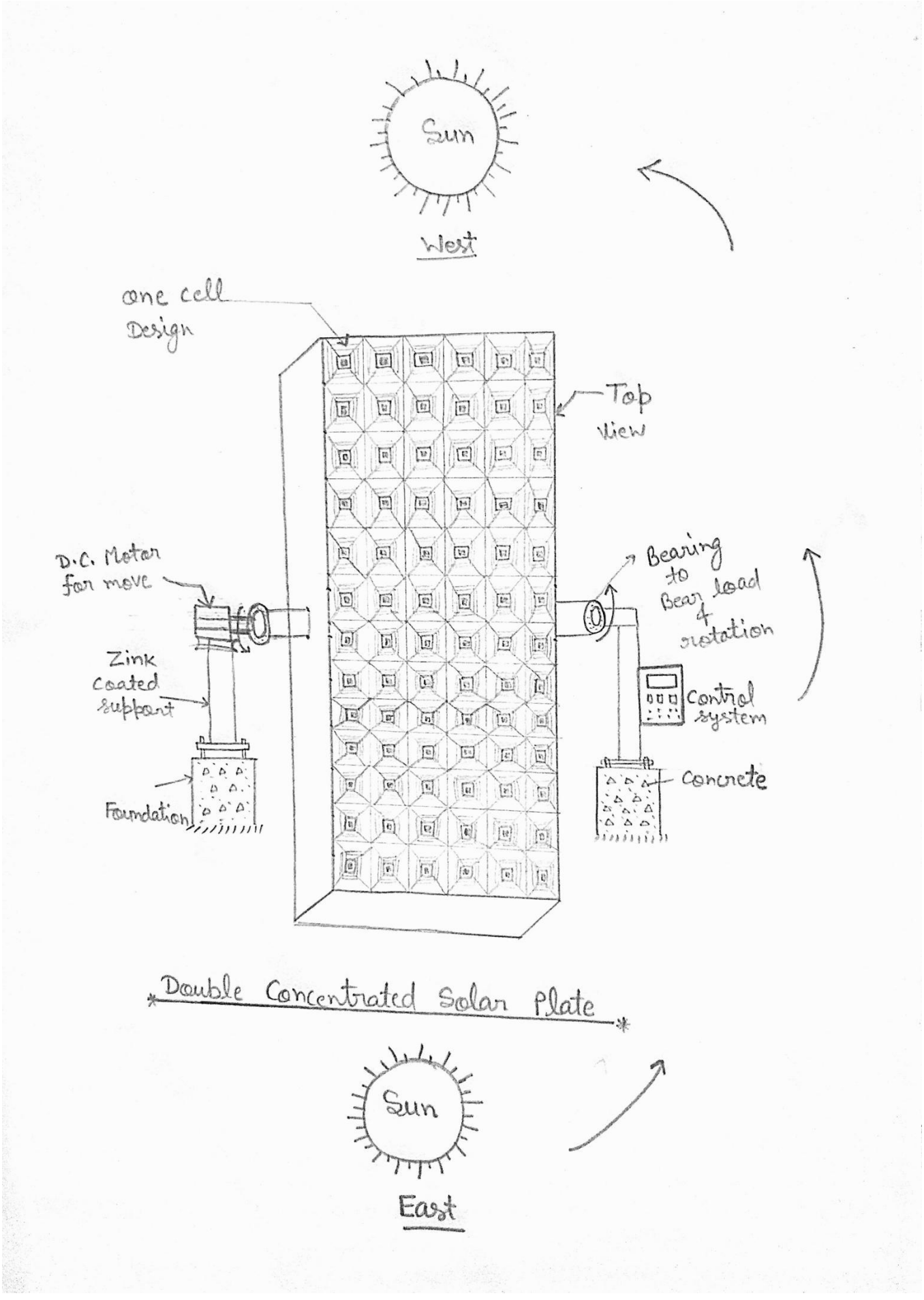
According to diagram the solar panel will be fixed on the two column and solar panel will rotate 55 degree EAST (+) and 55 degree WEST (-) from the initial horizontal (180 degree) position.

The water supply will be given to clean the solar panel. On the zinc coated beam the hose having water inside is connected which will pass from top to west side and spray water. The scrubber connected to small D.C. motor will clean the dirt by sliding on the panel and again come back to initial position. Alternative method of cleaning can be implemented, if this is not proved effective. The solar panel is connected from east to west and also rotates from east to west according to sunray angle. We can easily clean the plate by switching on the D.C. motor if it is raining, otherwise stored water can be reused.

III. CONCLUSION

1. Average 10-12 hours per day power generation will be obtained by this technology on sunny day.
2. Approximately 8-9 hours peak point power generation.
3. The efficiency is approximately 70%-75% more than other solar panels.
4. Low cost of implementation.


* Double Concentrated Solar Power *
Sun
WEST
Sun
Sun light
Glass with Lens Power
Semiconductor
Lens
semi conductor
SIDE VIEW
One Cell Design
semiconductor
TOP VIEW
semi conductor
semi conductor
semi-conductor
semi conductor
Thick semi-conductor layer
High Energy Absorber Semiconductor
semi-conductor
Main water line
Rotate to clean 120°
Water Spray
Nozzle
Small D.C. Motor
small D.C. Motor
water Hose
Rotating Rod
Bearing
solar Panel
Water Pump
water level Indicator
water Tank
Water Pump
water Level Indicator
water Tank
Sun
EAST
Solar * PLANT * LAYOUT


Sun
West
one cell
Design
Top
view
D.C. Motor
for move
Zink
Coated
Support
Foundation
Bearing
to
Bear load
&
rotation
Control
system
Concrete
Double Concentrated Solar Plate
Sun
East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