International Journal of Engineering Science Invention Research & Development; Vol. VIII, Issue 1, JULY 2021
www.ijesird.com, E-ISSN: 2349-6185

PERFORMANCE ANALYSIS OF SOLAR STILL EQUIPPED ABSORBER WITH CORRUGATED FINS

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Abstract— **Desalination is a water supply option that is used widely around the world and involves taking the salt out of water to make it drinkable. Many countries use desalination as a way of creating a more reliable water supply that is not dependent on rain. Earth is known as the " Blue Planet " because 71 percent of earth's surface is covered with water. Water also exists below land surface and as water vapour in the air.**

Keywords— **Desalination, Water, Freshwater, Solar, Atmosphere.**

1. INTRODUCTION

Pure water also known as purified water is water from a source that has removed all impurities. Distilled water is the most common from a pure water. Pure water can be purified by carbon filtration, microporus filtration and ultraviolet oxidation. Some places use a combination of Purificationprocess. Solar desalination is not a new idea, It has been known for ages, antique salore to desalt water with simple and small sized solar still. It's also a fact that production of fresh water requires a large amount of energy 1000m^3 of freshwater per day requires 10000 tons of oil per year through solar energy is often labelled as ' free energy ' it's not so simple to evaluate feasiblyand cast for solar desalination.

Solar water desalination is the process of using energy from the sunlight to separate freshwater from salts or other contaminants. The heat causes the water to evaporate, cool and condense into vapour, leaving the contaminants behind. Solar stills can be used for low capacity and self reliant water supplying systems.

2. PROBLEM IDENTIFICATION

1. The grand water in and around the industries, for a distance of about 5km, becomes unfit for human and cattle use.
2. Evaporation rate of the effluent is aggremented when the packed bed solar water collectos used.
3. The evaporated water vapours left from the collectors goes as waste.
4. Additional accessories added to increase the productivity.
5. In comparison with conventional desalination, the yield of the single basin solar still is very less.
6. Depth of water in the solar still decrease in the depth increase the evaporation rate.

3. AIM

To produce water with a low salt from sea or brine using solar energy.

4. OBJECTIVES

- Innovations that can improve challenges such as scaling and corrosion.

- A high feed water temperatures can be achieved.
- Better life to the humans which suffers from proper drinking water problems.
- Efficiency and also reduces the leaving cast of water.
- Produces water at high quality.
- Any type of water can be purified into portable water means of this process.
- Wastages of water will be minimum.
- Utilizing low cost locally available materials for assembly.

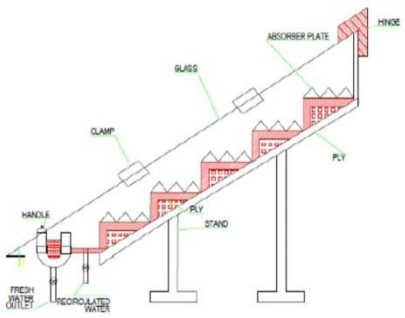
5. METHODOLOGY

We will fabricate a machine according to following parts

- Collecting research paper
- Finalization of title
- Making project proposal
- Selecting area of work
- Making CAD model and CREO animation of machine
- Analysis different components of project finding resources
- Finding resources
- Collecting different component
- Starting making project report
- Assembly of project
- Trial on project

6. Propose Project Work

Diagram



a) Hinge:- It is a mechanical bearing that connects two solid objects, typically allowing only a limited angle of rotation between them. Hinges may be made of flexible material or of moving components.
b) Absorber Plate:- The temperature of glass cover is lower than the absorber plate and is a good absorber of thermal energy and reduces convective and radiative looser of sky. Wherever plate it intercepts and absorber the solar energy. The absorber plate is made of copper, aluminum or steel in the thickness of 1 to 2mm.
c) Ply:- It can constructed of a mix of the two . It can be made from softwoods or hardwoods and used in desalination on inclined ply.

d) Glass:- It can made from natural and abundant raw materials (sand, soda, ash and limestone) that are melted at very high temperature to form a new material glass.
e) Clamp:- C-clamps or G-clamps are typically made of steel or cast iron, through smaller clamps may be made of pot metal and used holding edges to work securely in place.
f) Handle and stand:- Materials like thermosetting plastic can be used for making handles of utensils and stand in this we adjust and construct whole frame on it, its made by wood, metal, aluminum and PVC.

7. CONCLUSIONS

Most solar desalination systems are independent system desalination of solar combined together solar resources are aduptant and it used for desalination applications, through the renewable energy is cleaned of our planet which available yet. The direct method with different types of still have discussed in details. Solar still are low cost. Performance of low cost still can enhanced by integrating will evacuated tubes, plate collectors, heat pipes.

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