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A Review Paper on Solar Based Natural Water Cooler with Uv Protection Chamber

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ABSTRACT

We claim that the types of interactions that occur at a communal artifact may take the form of informal conversation, information transfer or knowledge exploration depending on the structure of the water cooler and the activity which prompted the Interaction. If this same water cooler effect can be fined tuned to provoke more instances of knowledge exploration, then learning can be achieved more naturally—which is especially important in informal leaning. This paper highlights the water cooler effect of Kitchen Science Investigators, an after- school informal learning environment, to suggest Characteristics of the water cooler effect that encourage knowledge exploration.

I. INTRODUCTION

A Resource is a source or supply from which benefit is produced typically resources are materials, services, staff etc. are transformed to produce benefit and in the process may be consumed or made unavailable. Benefits of resource utilization may include increased wealth meeting needs or wants or enhance well-being.

There are Two Most Important Types of Resources. They are as Follows:-

1) Non-renewable Resources:-
2) Renewable Resources:-

So the thing which has to be focus on is that the non-renewable resources are limited and are going to be empty in a next 30 to 50 years. so we have to move to the use of renewable resources .a conventional water cooler consumes electricity which is also a non-renewable resource .so in place of that a natural water cooler is best machine which works by renewable natural resource.

II. METHODS AND MATERIAL

The essential components of natural water cooler are copper pipe which is made in helical shape, copper water storage tank and a solar operated DC fan.The diameter of the copper pipe in the bottom portion is comparatively less than that of upper portion.A water filter is also provided in the inlet water pipe section. The whole structure is encased in a stainless steel body with proper ventilation.

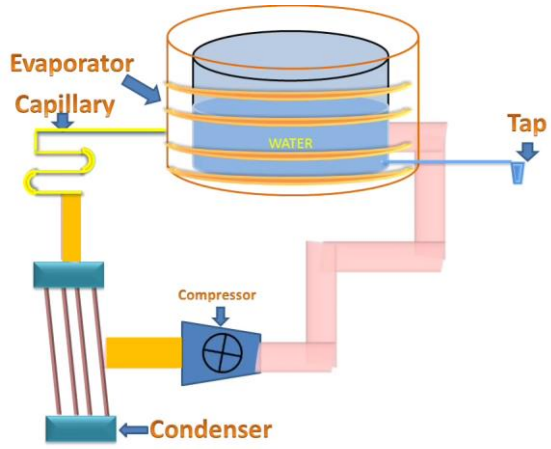

Figure 1: Working cycle of Actual water cooler[1]

III. Design & Specification of Parts

The Concise Oxford Dictionary explains design as 'a mental plan, a scheme of Attack, end in view, adaptation of means to ends, preliminary sketch for picture, invention.' Evidently there is a lot more to design than mere visual aspects, and design is not restricted to engineering. Design is the application of creativity to planning the optimum solution of a given problem and the communication of that plan to others.

MAJOR PARTS :

Structure Or Body
Copper Coil Or Copper Wounding
Dripping System

IV. LITERATURE REVIEW

Thomas C Delson, Swatin Raj V R, Swaroop A, Dr S. Sankar[1] concluded that Critics of renewable energy often cite the fact that technology such as solar only produce energy when the sun shines. By this system we can provide an economic efficient and feasible solar water cooler. It is clear that these systems offer environmentally clean alternative technology. Vijaykumar Kalwa and R Prakash[2] concluded that These systems are most of the time not suitable for villages due to longer power cut durations and high cost of products. Solar power systems being considered as one of the path towards more sustainable energy systems, considering solar-cooling systems in villages would comprise of many attractive features. Petros Gebray, Ashenafi Kebedom and Fana[3] Filli the TDS decreased from an average of 2800 ppm to 100ppm and the concentrated TDS in ppm goes up from 1500 in the morning to more than 4000 ppm at around noon. This resulted with significant decrement of the TDS in the finally treated water. Similarly, the percentage of salt rejection throughout the day of the experiment was also considerable. Starting from 90% early in the morning reached to about 100% of salt rejection. Renewable energy sources (RES)[4]coupled to desalination offers a promising prospect for covering the fundamental needs of power and water in remote regions, where connection to the public electrical grid is either not cost effective or not feasible, and where the water scarcity is severe. Stand-alone systems[5] for electricity supply in isolated locations are now proven technologies. Correct matching of stand-alone power supply desalination systems has been recognized as being crucial if the system is to provide a satisfactory supply of power and water at a reasonable cost. The paper covers plants installed since 1990 on the coupling of the two technologies. The main driver promoting the take up of this technology is that water is a limiting factor for many countries in the Mediterranean region. [6]An efficient cost-effective batteryless photovoltaic-powered seawater reverse-osmosis desalination system is described. The system has a modest 2.4 kWp photovoltaic array and yet promises to deliver 3 m3/d throughout the year in an example location in Eritrea, operating from borehole seawater (at 40,000 ppm). [7]We concluded Existing demonstrations of photovoltaic-powered desalination generally employ lead-acid batteries, which allow the equipment to operate at constant flow. In practice however, batteries are notoriously problematic, especially in hot climates. The system employed here operates at variable flow, enabling it to make efficient

use of the naturally varying solar resource, without need of batteries. Richard Morris & Associates[8], Energy & Environmental Consultants, Thus we concluded that from this we get perticular dimensions and current cost. Tripanagnostopoulos, Th. Nousia, M. Souliotis, and P. Yianoulis[9], Hybrid Photovoltaic/Thermal Solar Systems, Solar Energy. We get a nomenclature and PV-T Diagrams. Es Momhamad ,G Papabakis, E Mathioulakis[10], Batteryless photovoltaic reverse-osmosis desalination system. We conclude The construction and testing report of a photovoltaic reverse osmosis system. Al-Karaghouli Ali, Renne, D & Kazmerski[11] Technical and economical assessment of photovoltaic-driven desalination systems. Fritzmann, C., Lowenberg, J., Wintgens, T & Melin[12] State-of-the-art of reverse osmosis desalination. We concluded The discussion of process fundamental, membranes & membranes module & development in membranes technology.

V. CONCLUSION

For seawater desalination, one membranes process Reverse Osmosis is currently used. The selection of any process depends on many factors, such as salinity and Quality of the feed water, Plant capacity, Site Conditions, Energy cost, Operation and maintenance cost, and the availability of qualified labor. The energy cost is the largest segment of the total water production cost- around 60% of the water cost produced from the distillation plants and about 45% of the water cost produced by the RO plants. The included better quality of the produced water, less impact with the change of feed water quality, no membrane replacement. Sun light is easily available. Thus use the sun rays in the project. And main is electricity is not necessary for working the system. Thus All component is attach and make the solar energy based natural water cooler with UV protection chamber and it is use to purify water and with certain cooling. It is very useful at where problem of water availability or unhealthy water.

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