

Save consumption of electric coil by water treatment

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Abstract— By survey we mostly used electric energy in daily life. In domestic purpose hot water are used for various applications. Various coils are used for heating purpose to save electric energy up to literature survey coil design made by various author but in this experiment water properties will change and studied about water properties after treatment. There are various method which are used for to change property of water like in this experiment we concentrate on pH of water. Ph of water changes by natural resources and observe what effect on water heat property by changing property of water. There will be getting best method to reduce electric energy so whenever coil or electric furnace boiler used there will be water treated process will conduct. There is hypothesis is if change in pH of water due to that electricity required to heat water is also vary. In Soudhi Arabian countries they are studied in water property because mostly there are available sea water which pH is large so when use is water for that that steam generation that time required fuel is large if compare with when pH is less Because impurities added in water.

Index Terms—pH of Water, Energy meter, Natural Resources, Water, Domestic Coil.

I. INTRODUCTION

This experimental study showed various methods which can save electric energy and due to that energy produced resources will increases. In boiler system water converted in to steam and we used this steam for to run turbine and produce electric energy. Now days there are some private sector also who produce electric energy by using boiler system or other application means boiler are used mostly which work electric furnace.

Saving energy is big challenge in front of us for that we got observation that maximum energy we use for heating water.

In this paper we studies about water treatment after water treatment we can used this water for to make steam and observe that which method are suitable for to save energy in this experiment set up we used aqua guard concept what actually they do they reduce ph and contamination remove by using filter so by reducing ph or increasing how will save energy. During this experiment some time we use natural resources stone and other sources. This is new concept so data is not available anywhere.

Density changes of water by adding some impurities here we add some impurities so thermal conductive increase and require energy reduce. In power plant to reduce pH of water they are use chemical which cost are large so electric generation cost increases so electric energy should available in lowest cost and for that initial cost will be reduce by using

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natural resources which cost is less so cost of generation of electricity reduce. Here we changes potential of hydrogen so change so heat transfer property will vary.

II. PROCEDURE FOR PAPER SUBMISSION

A. Review Stage

To evaluate various paper in which we define pH of water with respect to water and water properties. By literature survey we got when pH of water changes and that water use in pipe corrosion will reduced and parameter also changes so this concept use in specific heat transfer of water. If observe fish tank there are some material use for that pH of water is stable so like driftwood, river stone and almond leaves which stable pH of water and reduce pH of water. In power plant they reduce pH of water and then after I passes to steam production. In this experiment we dipped natural resources in water with time due to that pH of water varying. When dipped period increases pH decreasing rate also increases. Proportionally weight of natural resources adds with water and observes pH variation. In everyday we increase 10 Percentage and volume of water take constant which is 5 Liter.



Fig.1 RO System

RO system also changes pH of water so this water which treated after RO system we can use this for pH changing process. Generally for drinking water we need 6.7 pH of water but in RO system we get 6.3 pH of water by using various stones which are use in RO system. Naturally also pH is vary when water contact with natural resources that time also pH vary with time.

B. Methodology

In this experiment pH of water changes by peat moss, almond leaves and driftwood. This material is easily available in every ever. By using this material pH of water will change and after that find Thermal property of water. By experiment evaluate best method which can suitable for reduce electric consumption and save energy.

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Material which use in experiment :-

Peat moss :- This naturally available . but when we use peat moss due to that color of water change



Fig.1 Peat moss which reduce pH of Water.

Driftwood:-

Driftwood is available easily there so many type driftwood is available so we can use anyone but now we use shevari driftwood and observe various parameter.



Fig.2 Driftwood which reduce pH of water.

Almond Leves :-

Almond leaves is also use for to reduce of pH of water.



Fig. 3 Almond leaves

These natural resources we can use for reducing pH of water. These natural resources filled in water for some specific pH meter use to measure pH of water.



Fig.4 pH meter.

time and take reading after some specific time and take reading of energy meter.



Fig. 5 Energy Meter

To measure consumption of electric use energy meter of to calculate specific heat .

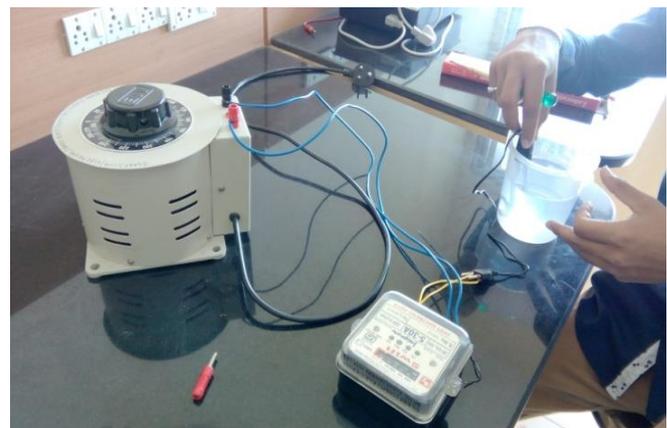


Fig. 6 Experimental Set up

By varying pH water and heat water observe temperature difference with required electric energy. In form of proportionally we add natural resources in water by observing it what effect on water pH observe.

C. Final Stage

By putting various natural resources in water evaluate value of thermal properties of water.

III. CONCLUSION

Varying pH of water Changes Thermal Properties Of water. This experiment we get best utilization of nature resource for to save energy. There will be getting best method to reduce electric energy so whenever coil or electric furnace boiler used there will be water treated process will conduct.

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REFERENCES

- [1] J.H. Reed, J.C. Thompson, R.P. Broadwater and A. Chandrasekaran, "Analysis of water heater data from Athens load control experiment," February 1993 IEEE Trans. Power Delivery, vol. 4, no. 2, April 1989, pp. 1232-1238.
- [2] Feroz Alam and Abid Hasniain, "Studies on Swelling and Solubility of Modified from Taro : Effect of Ph and Temperature.", Agricultural Science, 2009, Vol. 74 No. 1 pp. 45-50
- [3] Abdullahi, Mohammed Evuti¹, Aloko Duncan Folorunsho¹, Baba Galadima Agaie and Mohammed Jibril "Predictive model for lime dosage in water treatment plant" International Journal of Scientific and Research Publications, December 2012, Volume 2, Issue 12.
- [4] Saaid M.F., Sanuddin A., Megat Ali, M.S.A.I. M Yassin "Automated pH Controller System for Hydroponic Cultivation." IEEE 9th International Colloquium on, 2015, pp. 186-190.
- [5] Folly K. A and Main T.A, "Effects of Tariffs and Energy Saving Schemes on Domestic Households Energy Consumption" in IEEE, Vol. 13 (2013) 68- 73
- [6] Beute N and I E Lane. "A Model of Domestic hot water load" Energy efficiency enterprises south Africa arnsatble road 008 Lynwood manor IEEE Transaction on power system, 1996, Vol. 11.
- [7] Sarit Kumar Das, Department of mechanical engineering, Heat Transfer, Indian Institute of Technology, Madras. "Temperature Dependence of Thermal Conductivity Enhancement for Nano fluids." International Journal of Heat transfer, (Aug 2003) Vol. 125
- [8] Patil P.N., Sawant D. V. nad Deshmukh R. N (2012) "Physico – Chemical Parameters for Testing of Water – A review " International Journal of Environmental Science. Volume 3, no 3, 2012, pp. 1194-1207.
- [9] Bold, H.C. (1967). *Morphology of Plants. second ed. Harper and Row*, New York. p. 225-229.
- [10] Gorham, E. (1957). *The development of peatlands. Quarterly Review of Biology*, 32, 145-66.
- [11] CA Duff & C Bradnum (1995) "design of a domestic water heating system to save water and electricity" Vol. 52, Issue 1, pp. 47-53.

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