Consumption of electric energy by changing water properties using natural resources

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Abstract
Electric energy mostly in our life so demand of electric energy increase. By survey maximum electric energy in domestic purpose which is 60 percentage uses for heating water so to reduction electric energy for heating water this experiment study. In This experiment pH of water changes and observe it at effect on water when water pH changes. pH is depended on H and OH molecules. If increases Hydrogen molecules pH of water will reduce water terns in to acidic and if hydroxide molecules increase pH of water increases and water turns in alkaline. In this experiment we observe specific heat of water and compared with treated water and normal water. In this experiment we use pH reduce material which reduce pH of water and which is available in naturally.

Keywords: natural resources, specific heat, pH, water

1. Introduction
The Energy is available in various forms it converts from one from to another from. For production of electric energy use non renewable resources so need to save energy for our children's children, job and economy also depended on energy, so many environmental benefits is there. Mostly in India we use coal and as per consumption rate of coal we can use coal up to 125 years and petrol can use only 25 years. Currently in India 5, 87,560 villages got electric power but yet 1, 12,400 villages haven't electric energy. This project idea generated during visit in power plant in JSW power plant which situated in Guhaghar and Reliance power plant which is near to Nagpur by observation found that they are use chemicals for reduction of pH of water but it is costly due to that electric energy is very costly in every day it will increases as per demand. pH was positively correlated with electrical properties like electrical conductance and alkinality [12]. When they are use chemical which are generally use for reduction of pH of water it can be reduce by natural resources. Basically there are four methods to reduce ph of water like driftwood, peat moss, almond leaves and rocks. In this experimental project we use this four method and evaluate best method which are suitable for reduction of pH of water and which are economically so electric energy will available in smallest cost. Natural water contain impurities due to weathering of rocks and leaching of soils, mining process so pH changes [12]. By changing shape and size of heating coil save the energy by controlling decentralized water heating [6]. Electrical load required to supply domestic hot water is an important because it represent a large portion (30 to 50 %) of domestic load [7]. Percentage of solubility also changes temperature difference means when solubility changes in water temperature variation increase as well as pH changes [10]. Thermal conductivity will changes if add particles concentration. Temperature and thermal conductivity is directly proportional to each other [8]. In water treatment ammonia is use to set pH of water in boiler industry. Improves boiler efficiency by changing pH of water with combined cycle plant. This experiment done in Japan [11].

2. Objective and Investigation
Experiment was conducted on water by changing pH of water from 4 to 7 with using natural resources. The main objective of this investigation is to find out the effect of pH of water on properties of water as well as to find suitable method.
Following are the main objectives of the investigation:
- To investigate changing pH effect on thermal properties of water.
- To determine the best suitable method which is reduce pH of water.
- Save electric energy so fuel period will be increase.
- Reduce water treatment cost in power plant.
- Consumption of fuel in power Plant or other industry where hot water use.
- Reduce electric energy in domestic which use for heating water.

3. pH Reducer Methods
For reduction of pH of water we use natural resources which cost is low. The material details are as follows:

3.1 Peat moss
Peat moss is very much beneficial for grow plant. Peat Moss is dead fibrous material that forms when mosses and other living material decompose in peat bogs.

Fig 1: Peat Moss

3.2 Almond Leaves

Almond Leaves mostly use in fish tank because water quality maintain in such way which is suitable for fish health. Almond leaves are best water conditional and natural medicine to promote healing and breeding. They have anti bacteria and anti fungal properties. When Almond Leaves placed in water tank almond leaves slowly start to decompose while this procedure turn water in yellow or brown color by reeling tannins. These tannins reduce pH of water should be as the above heading

Fig 2: Almond Leaves

3.3 Driftwood

Adding of a piece of natural driftwood to water tank help to lower pH level of water. Wood is act like filter for water so its reduces contaminant and impurities. Driftwood reduces pH of water.

Fig 3: Driftwood

3.4 R.O. System

RO Water System Which is reverse osmosis a process of water purification involving use of semi permeable membrane which removes many types of molecules and ions and resulting in fresher and softer water. In filter process small ions go through while heavier, larger ions like lea, chlorine and other water pollutant filter out. RO system reduce high pH of Water during process output from RO system is up to 6.3 pH of water.

4. Experimental Work and Test

4.1 Mix Design

Mix design carried out for Natural resources by varying percentages of recourse with *constant volume of water.*

4.2 pH measurement, temperature and Energy measurement

pH meter are use for measurement of pH of water. Generally drinking water pH is 6.3 to 6.7 which are suitable for human body. By using driftwood, peat moss almond leaves and rocks reduce that pH up to 4. After treatment temperature measurement by Temperature sensor which gives water and

atmospheric temperature. By using electric coil treated water will heated and observe energy required by energy meter and temperature difference compared with varying natural resources.

Fig 8: Experimental Set - Up

5. Test Result

5.1 Best method for reduction pH of Water

In this experiment four method basically use which is natural resources and easily available. This experiment did in 140 day experiment where water volume is constant which is 5 litter volumes but percentage of natural resources changes. We use basic four method which are Driftwood, peat moss, almond leaves and various stones form this method almond levees result gives best result which get minimum pH value with minimum time as well as electric energy also reduce. Treated time is also constant here 24 hours is constant time where we contact natural resources with water constant means 24 hours. In this table we calculate average value of pH of water with treatment and without treatment which taken in 10 days. Material variation is there from 10 gm to 140 gm. In this experiment 10 days we repeated procedure and take reading that average value is considered.

6. Result and Discussion

The influence of pH treatment studied and observes that changes properties of water. Thermal properties changes with changing pH of water here we use natural resources like peat moss, driftwood, almond leaves, RO system and stones. Reduces pH of water with increasing percentages of natural resources. Power plant system use chemical which cost is more as compared to natural resources. Natural resources increasing with 10 to 140 gm in constant water which is 5 litters.

When natural resources use economically is best as well as pH of water is also reduced when percentages of natural resources increase pH reduction rate is also increase.

7. Conclusion

Based on experimental observations, following conclusions can be established:

1. pH of water reduces specific heat also reduce as compared to normal water which is does not treated.
2. As the Percentage of natural resources increase pH of water also reduces.
3. When use peat moss, almond leaves driftwood, stones and RO system then it observe that almond leaves is best method as compared to other which reduce pH drastically.
4. Increasing temperature of normal water required more electric energy as compared to treated water which pH value reduce. In almond leaves method required less

energy as compared to driftwood, RO system, stone and peat moss.

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