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3 in 1 Smart Water Saving Device

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Abstract: ***Friends, nowadays the level of water is decreasing day by day, to save this level of water, all the people are making efforts such as collecting rain water, using RO's waste water for plants etc. We also wanted to make an effort which will help to a great extent in saving the water level. Friends, you must have seen that 10 liters of water is stored in the flush tank and using it repeatedly consumes a lot of water. To save this water, we have thought of a solution. It will have an arrangement in which two containers of 2 liter and 5 liter will be placed inside the flush tank. The waste water from the kitchen sink will be sent to the sewerage which will be stored in the storage tank and purified and reused in the flush tank. This idea will be of great benefit.***
Keywords: IR module, Alum (fitkari), water pumps, filters, 5 volt dc supply.

I. INTRODUCTION

Our planet Earth has an abundance of water but only 0.3% is attainable and fresh. We waste a lot of water every day. The process to purify and filter water is too expensive and requires lot of resources. But we don't realize the real value of freshwater while we waste it as if it is unlimited. Yes, it is free in many countries but it does not mean it has no value. If we continue to waste water like this, then we would not be able to fulfil our basic needs. We need water to survive. There is a need to spread awareness about water scarcity and the importance of saving water. The bathroom, wash basin and washing machine wastewater can be reused in toilet flushing and gardening. So, to filter water and to reuse it, we have made this project 3 in 1 SMART WATER SAVING DEVICE. We have used alum to filter water. Alum is added to the water so that the negatively charged colloidal particles can clump together into "flocs", which then float to the top of the water, settle to the bottom of the water or can be more easily filtered from water, prior to further filtration and disinfection of the water. We can also save energy as energy is also very essential for our life processes.

II. METHODOLOGY

In our homes as we wash dishes, a great amount of water is wasted. in this as it is directly sent into sewers. To save this water we have made a chamber in which the water will be stored and it will be cleaned with the help of alum which will be dissolved in it. The flush tank will have two containers of 2L and 5L. And they will be connected to the pumps. When the button will be pressed the water of that container will come out.

III. WORKING

In this we have converted the manual tap into an automatic tap using the IR sensors. The IR sensor module will allow the automatic turning ON and OFF of the tap as we bring our hands near the tap. In this the water is directly sent to the cleaning chamber instead of going to the sewer as shown in fig.1

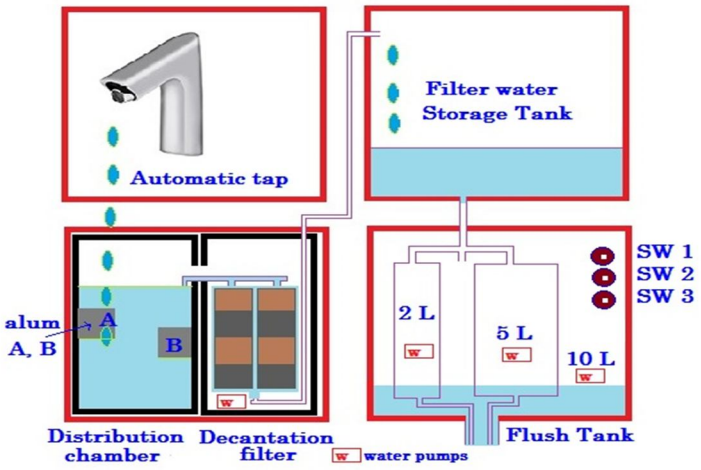

Figure1. 3 in 1 smart water saving device

This water when kept in the cleaning chamber will get cleaned with the alum solution and then it will be sent to the decantation chamber for further purification. And with the help of a pump placed in this tank the water will be sent to the flush tank. In the flush tank we have made some changes, in which we have kept two small containers in the flush tank in which the first container will be of 2L, and second of 5L. All these three containers will be attached to the pump. The pumps will directly be attached with different buttons and when we will press them the water will come out according to it's capacity.

IV. APPLICATIONS

A. We can use it to purify water at our homes, in schools, offices, petroleum refineries, industries as a lot of water is wasted.
B. Kitchen waste water used in Flush tank.
C. Automatic electricity will also be saved.

V. ADVANTAGES

This project is very useful especially when there is shortage of water, we can reuse the water which is once used. We can use that water in agriculture, industries to generate hydroelectricity. It can also be used to save energy. In this way we can secure water for future generations. In this project there is one more advantage that we do not need to turn on the tap, just we have to bring our hand near the tap.

VI. CONCLUSION

The project will be useful to save water waste water after filtration can be used for further household purposes like flush tanks, car washing etc.

VII. FUTURE SCOPE

Our future scope is to connect it with solar panel so that it will be using complete sunlight instead of using the home electricity with the help of this it will even save more electricity.

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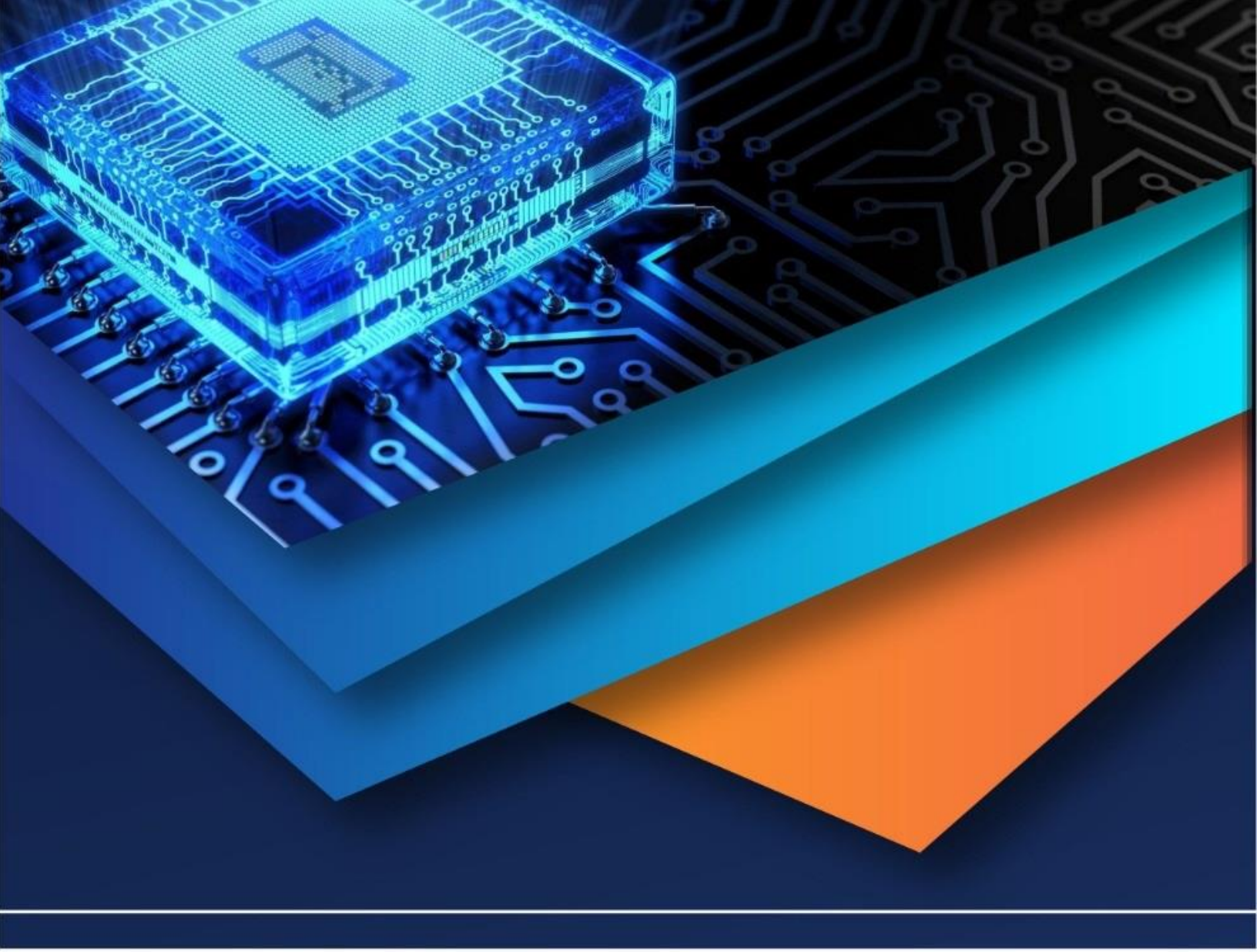
	Need of the hour innovations. Keep it up! Harisharan Aggarwal Chartered Engineer IEI Kolkata
	The children have dedicated their time in the designing of the project. They are extremely hardworking and innovators of future. Ms Gagandeep kaur



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