

LOW COST EMBEDDED SYSTEM FOR AUTOMATING THE IRRIGATION SYSTEM OF A CROP PLANTATION

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Water is an essential resource for all life on the planet. At present only about 0.08 per cent of all the world's fresh water is exploited by mankind. It is therefore questionable that this fresh water resources can meet the ever increasing demand for water. Agriculture is the largest user of the world's freshwater resources. It consumes 70 per cent of fresh water. In this project, we attempted to optimize water usage in agricultural sector by automating the supply of water to crop plantations.

There are many systems and devices that had been introduced for automating the water supply of crop plantations which are very costly. In our project, we have attempted to design a low cost embedded system for the supply of water to a crop plantation.

We have designed a low cost soil moisture sensor which can be deployed in the farm field. This sensor operates water pumps of the irrigation system of the plantation. The sensor measures the water content of the soil and automatically shuts down the pumps. This way we could supply the precise amount of water to the plantation without wasting the water resource. The sensor had been designed so that it could be easily adjusted according to the varying requirements of different crop varieties, micro climates, seasons etc.

As the components used in the design are very low cost and freely available, this sensor would certainly draw the attention of small and middle scale farmers in the country. The other one interesting feature in the system is that the technology that has been used in the development of the system is also very simple and hence the maintenance will be very easy and the maintenance cost will be minimum.

