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BIOENERGY AND GREEN TECHNOLOGY: CHALLENGES AND OPPORTUNITIES [ORA-2016]**

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AUTOMATIC IRRIGATION SYSTEM USING SENSORS

Bhavani.C

Devishree.V

**College of Engineering, Guindy
Anna University, Chennai 600025**

DevishreeV : devishreemail@gmail.com : 9442167862

Bhavani C : bhavanic95@gmail.com : 9445722515

Abstract:

With increasing scarcity and growing competition for water, judicious use of water in agricultural sector will be necessary. Through proper irrigation, average crop yields can be maintained (or increased) while minimizing environmental impacts caused by excess applied water and subsequent agrichemical leaching. Manual irrigation technique leads to loss of water and hence dried crops excess of water in the field result into slow growth of crop and less production. Irrigation is an essential process that affects the crop production. Timely application of water and fertilizer in minimum amount will reduce the pollution. As nowadays there is a scarcity of man power in the field of agriculture, so the farmers are looking for the technology that is easy to work on and which can substitute the work of a labor for the better. An automated system was developed for timely application of water and fertilizers to crop by using soil moisture sensor. With the help of soil moisture sensor reading, pump motor, agitator motor, servo motor and solenoid valve were controlled by Spduino. Controlled volume of solid fertilizer is mixed with water by agitator motor. Application of fertilizer along with irrigation water for every time reduces the over application of fertilizer to the agricultural land which helps in controlling groundwater pollution.

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