

Solar powered Automated Irrigation System with advanced solar tracking

*Soumyadipta Mukherjee , Swastik De, Swapneel Roy, Swastik Dev Chaklader,
Subham Maity, Prof. (Dr.) Sudipta Ghosh
Department of Electronics and Communication,
University of Engineering and Management, Kolkata
sudipta.ghosh@uem.edu.in*

Abstract

In present times, the most biggest issue is the spoilage of food materials due to huge wastage and inefficient usage of water in the field of agriculture. The extraction of underground water without any limitation is leading many land areas to become unsuitable for agriculture. To resolve these issues, we have made an automatic irrigation system which will sense the soil moisture level and will distribute the right amount of water to the plants so that there would not be any unwanted wastage of water. As we know, the whole operation of this system needs a massive amount of power, so we will be using solar energy to power this system. In present world, solar panels are widely recognized for being cost effective and are also very efficient. It is obvious that if the solar panels are fixed at a definite position, then it would limit the generation of energy as the sun changes its position while moving from east to west each day. To break this limitation, we have come up with a unique design of solar tracking system consisting of servo motor which will move the solar panels to change its angular position to track sunlight from sunrise to sunset. This system has been tested in real world conditions. It also demonstrates higher efficiency while consuming low power than existing systems.

Keywords - Solar Tracking, Smart Irrigation, Solar Panel, Sensors.