

HYDROPOD: LOW-COST, SCALABLE, AND CLOUD-ASSISTED HYDROPONICS SYSTEM

Abstract:

The simplest kind of hydroponic device to create and sustain at home is Deep Water Culture (DWC). The hydroponic agricultural system reduces the land requirement but on the contrary, consumes water more than the soil agricultural system. In addition, the water used in hydroponic systems can be purified, re-populated with nutrients, and nourished directly to the plants, ensuring that water is recycled rather than lost. The proposed hydroponic system can grow any plant (indoor/outdoor), especially vegetables without soil and without depending on the atmospheric conditions. The proposed hydroponic system will be maintained and controlled by the sensors. This invention is mainly related to the development of a cost-efficient and portable automated hydroponic system. Hydro-POD is a hydroponic automation system. The device is low-cost, modular, and automated, with microcontrollers and sensors reducing the need for human interaction. Cloud-assisted technology was created to increase stability to allow for remote tracking and control 24 hours a day, seven days a week, if necessary. It is a plug-and-play device that allows you to take the guesswork and hassle out of growing plants in water. It will seamlessly adapt any kind of architecture like hydroponics, fogponics, or aeroponics system. Simply set it up once and start growing plants faster, which tastes better. All the vital information will be displayed on the user's convenient mobile app.

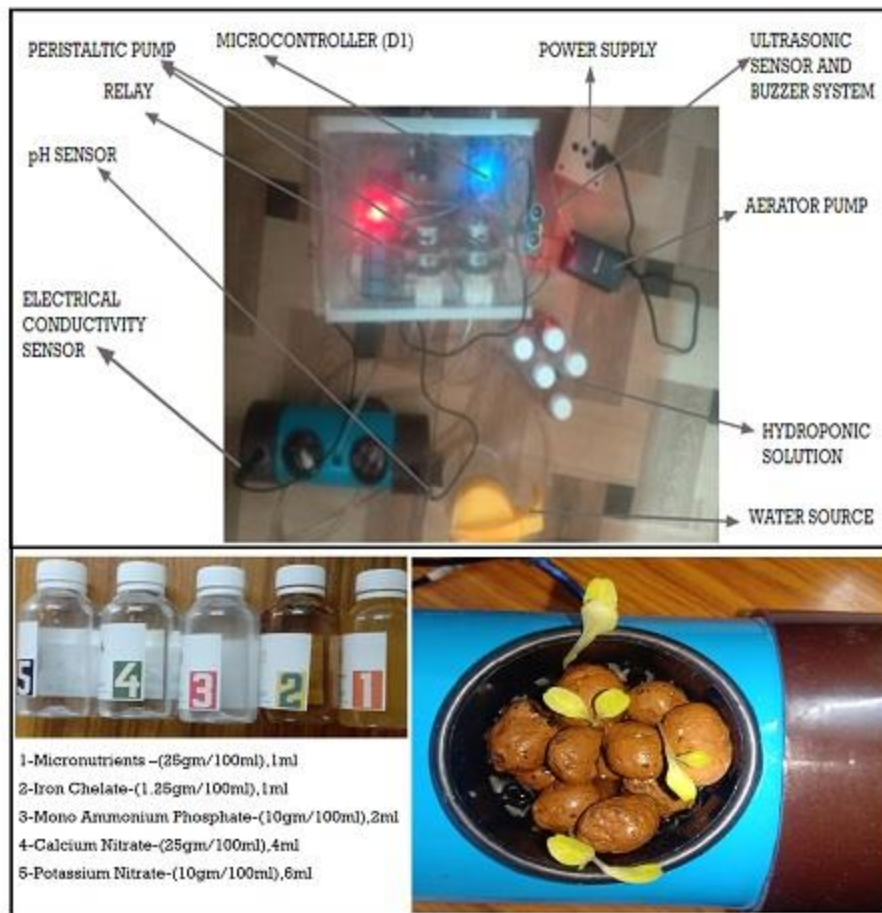


Figure - 2: Proposed Hydroponics System.