

Design of Microgreens Agriculture System Based on Solar Panel.

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ABSTRACT

Microgreens is one of the innovation in agriculture which utilizes lands as effective as possible. This farming method yielding tiny vegetables from various plant species which are edible. Microgreens can be planted on soil or by hydroponics with natural sunlight or artificial light (LED). Usage of artificial lights for 12-18 hours a day in a closed room (such as greenhouse to substitute sunlight needs electricity to power it. One of the method to power such needs is by using renewables energy such as solar energy. This study aims to design and build a microgreens cultivation system using solar energy as power source for actuators of artificial environment with microcontroller assist. Result of the design shows average energy yielded by solar power generation system is 168,67 Wh per-day which adequate for average cultivation system energy consumption which is 118,99 Wh per-day. Designed system also able to yield quite good harvest.

Keywords : Microgreens, Solar Panel, Off-Grid Solar Power, Microcontroller