## IOT Based Automated Production and Control System for Clean Water Filtration Through Solar Energy Operated by Submersible Water Pump

Authors : Musse Mohamud Ahmed, Tina Linda Achilles, Mohammad Kamrul Hasan

**Abstract**: Deterioration of the mother nature is evident these day with clear danger of human catastrophe emanating from greenhouses (GHG) with increasing CO2 emissions to the environment. PV technology can help to reduce the dependency on fossil fuel, decreasing air pollution and slowing down the rate of global warming. The objective of this paper is to propose, develop and design the production of clean water supply to rural communities using an appropriate technology such as Internet of Things (IOT) that does not create any CO2 emissions. Additionally, maximization of solar energy power output and reciprocally minimizing the natural characteristics of solar sources intermittences during less presence of the sun itself is another goal to achieve in this work. The paper presents the development of critical automated control system for solar energy power output optimization using several new techniques. water pumping system is developed to supply clean water with the application of IOT-renewable energy. This system is effective to provide clean water supply to remote and off-grid areas using Photovoltaics (PV) technology that collects energy generated from the sunlight. The focus of this work is to design and develop a submersible solar water pumping system that applies an IOT implementation. Thus, this system has been executed and programmed using Arduino Software (IDE), proteus, Maltab and C++ programming language. The mechanism of this system is that it pumps water from water reservoir that is powered up by solar energy and clean water production was also incorporated using filtration system through the submersible solar water pumping system. The filtering system is an additional application platform which is intended to provide a clean water supply to any households in Sarawak State, Malaysia.

**Keywords :** IOT, automated production and control system, water filtration, automated submersible water pump, solar energy **Conference Title :** ICEEE 2023 : International Conference on Electronics and Electrical Engineering **Conference Location :** Toronto, Canada

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