

ABSTRACT

Limited access to clean water is still a problem for many Indonesian people, especially in remote areas. The aim of this research is to develop a portable filtration device to help provide clean, solar-powered water to the Central Lombok region. This tool is designed to use ceramic filters, activated carbon, and colloidal silver to filter contaminants in the air such as mud, heavy metals, and bacteria. The filtration system will be automated using Arduino Uno which will regulate components such as air level sensors, pumps, batteries and solar panels. 80 Watt solar panels are used as the main energy source and a 12 volt battery as backup power when sunlight is not available. Data will be collected on air quality and the performance of the tool when pressure is applied during the filtration process. It is hoped that this tool can help provide clean and quality drinking water for the residents of Central Lombok.

Keywords: *Water Filtration, Solar Powered, Arduino Uno, Clean Water*