



FINAL YEAR PROJECT REPORT

SOLAR POWERED WATER PURIFICATION PLANT SYSTEM

**In fulfillment of the requirement
For degree of
BEE (Electrical Engineering)**

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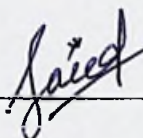
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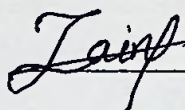
DECLARATION

We hereby declare that this project report is based on our original work except for citations and quotations, which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Bahria University or other institutions.

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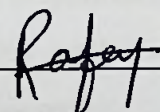
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SOLAR POWERED WATER PURIFICATION PLANT SYSTEM

ABSTRACT

This project is to develop a water purifier that is driven by solar energy and may be utilised for an infinite amount of time, with the quality of the water being monitored automatically by means of sensors. The concept of reverse osmosis serves as the driving force behind this endeavour. The solar panel is responsible for absorbing the sun's rays. After then, this energy is stored in a battery, which also serves to regulate it. The battery is connected to the inverter and the dc connection port, which is the location from where the purifying unit runs, through a switch. The purification unit features a pressure-maintained pump and a reverse osmosis system as part of its components. A high-pressure pump is used to provide the pressure necessary for the process of reverse osmosis. The microcontroller examines both pure and non-purified water with a pH sensor and a Tds sensor, depending on the type of water, to determine whether or not it is healthy to consume. With these sensors, we are able to determine the PH (potential hydrogen ion) as well as the TDS (parts per million) of water (input and output). We are able to determine whether the water is safe to drink through the automation of these sensors, and if it is not, we are able to re-purify the water down the drain. After carrying out this method, both the water tank and the output tap will be supplied with water that has been cleaned and disinfected.

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