

SALT LAMP: EFFICIENCY OF SUSTAINABLE SALT WATER – BASED POWER SOURCE LAMP

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ABSTRACT

Renewable energy is energy generated from natural resources and cannot be depleted. A new promising renewable energy source known as saltwater energy takes advantage of the conductive nature of salt water to generate electricity. A study has been conducted to develop and produce a saltwater powered lamp for rural and remote communities in San Pascual, Batangas. The main objective of this study is to bring out an economic newfangled radiance that initializes by salt water for agrestic and outlying communities in the Philippines along with ubiquitous nations. Specifically, this study seeks to determine the factors that affect the performance of the saltwater energy generation such as electrode's combinations, number of cells and the durability of the electrodes, distinguish the significant difference between the traditional lamp that is powered by electricity and the lamp which is powered by saltwater, examine the light lifespan and voltage output of the lamp considering the solution's salinity, and perform a device acceptability assessment to critically evaluate the product based on the aspects, serviceability, electric apparatus and it's frugality with regards to competence and confidence. The method of data collection, which was conducted, is experimentation. It was conducted between the two variables, namely, saltwater, the independent variable, and the efficacy of the lamp as the dependent variable. In gathering the data, the researchers used all the available resources and references to gather information, while the survey strategy was used to collect adequate, relevant quantitative data. The questionnaire was disseminated to the families of the specific area to determine the respondents' significant conception of the invention. It was found that the choice of electrodes as anode and cathode does affect the voltage output. It can be seen that in the saltwater solution, the combination of carbon as anode and aluminum as cathode produces the highest voltage output. Generally, the voltage output increases with a higher concentration of salt in a solution. However, due to the small power produce, the number of cells must be increased to produce enough power to light up a LED light. It can also be observed that even without the complete external circuit, the electrodes experienced reduction in weight with carbon (C) having the higher reduction in weight in comparison with Aluminum. Additionally, this paper shows that the salinity affects the duration of the generated lamp. Salinity is directly proportional to voltage in the experimental proceeding. The device is capable of lighting an LED lamp for more than 17 hours, after which the solution needs to be replaced. Moreover, based on the result of the conducted survey, out of 34 respondents, it gained a composite mean of 4.69 described as Very Satisfied. It shows that the overall aspect of Saltwater Lamp imputes an efficiently sustainable product that can replace standard lamps. Feasibility of remodeled lamp has consummated the production of another renewable energy source considering the conventional function of a lamp. Overall, the functionality of the lamp ensues great opportunity to be performing its best features as an alternative light source. The device received an excellent rating in terms of functionality. It produced the desired and promised outcome. In the light of the conclusion of the product, it's forcible as an auxiliary fount of illumination has been bonze and efficient. The product will corroborate to be prior explication on the huge per-centrum of electricity consuming when it comes to light energy in one nation.

Keywords: Green energy, Sustainable energy, Saltwater energy, Saltwater lamp, Electrode