

The Design of Photovoltaic based Mobile Dental Healthcare System

Abstract

Renewable energy has been growing in the medical field for the past decades. The technological development in the dental healthcare system brings lots of benefits to people, especially those who live in rural areas. This is because rural areas lack efficient transportation and power supply systems. Hence, this work focuses on the design of a mobile dental truck that uses renewable energy, particularly solar energy. In this paper, three different types of photovoltaic systems have been presented from which the optimum design is integrated into a mobile dental truck. In addition, energy management and the amount of energy usage in a mobile dental truck system are determined accordingly. The analysis of the system performance is then carried out, which aims to design and simulate energy demand in the dental system. This work demonstrates that renewable energy technology, particularly photovoltaic systems, can be implemented into mobile trucks for dental healthcare system applications.

Keywords

Mobile Dental Healthcare; Photovoltaic System; Renewable Energy