

Solar Powered Mini Air Conditioner for Automobiles

H.P.B. Gunawardhana, L.G. Chamath, and Asha S. Galhenage

As a tropical country, Sri Lanka experiences sunny conditions throughout the year. Most of the time vehicle users find it difficult to obtain shady places for their parking purposes. The temperature rise of the automobiles parked in sun is a critical issue which creates uncomfortable feelings for the passengers. Here we develop an affordable mini air conditioning system for the automobiles. The heat buildup in inside of the vehicle is fully investigated and the energy requires for cooling is also estimated. Solar energy is the most effective renewable energy source for countries like Sri Lanka. In this study, sustainable solar energy is used to maintain the vehicle inside temperature during the parking. Our design project is based on the photovoltaic system and the comfortable temperature is created by using a solar powered mini air conditioner. Our finding provides an attractive solution for this uncomfortable situation. Furthermore, the result of this study can be used by heating ventilating and air conditioning engineers to design more efficient air conditioning systems for different applications.