ABSTRACT

The use of fins to lower solar panel temperature during operation under climatic circumstances has been studied both theoretically and experimentally to improve solar panel performance. A heat sink with hollow fins is mounted to the rear of the solar panel to effectively cool it off passively. Solar panel temperature is forecasted using an analytical thermal model that accounts for heat dissipation from the heat sink. With the aim of examining the proposed thermal model and examining the impact of operating temperature on the power production from the panel, a comparison between practical and theoretical results for solar panels without and with fins was done.