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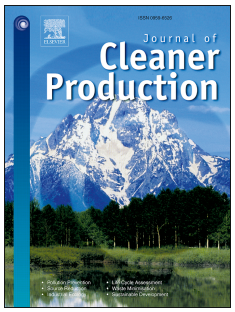

Energetic end exergetic performance of a parabolic trough collector receiver: An experimental study

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Energetic end exergetic performance of a parabolic trough collector receiver: an experimental study

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HIGHLIGHTS

- A parabolic trough collector (PTC) system was designed, manufactured and evaluated.
- An experimental study was conducted to evaluate the thermal behavior.
- A detailed energy and exergy analysis for typical days and for a daily monitoring was performed.
- The energy and exergy efficiency as well as the exergy factor were evaluated.
- The average energy and exergy efficiency are found to be higher under clear sky days than the cloudy days.

Abstract

In this article, an experimental investigation is evaluated with the aim of assessing the thermal performance of a receiver tube of a parabolic trough collector. The parabolic trough collector is designed, constructed and installed in the Laboratory of Thermal Processes, Research and Technology Center of Energy (CRTEn), Borj