Solar Collector Temperature Regulation

Temperature control in solar collectors is a nonlinear problem: the dynamics of temperature rise vary according to the oil flowing through the collector and to the temperature ...

All solar collectors are categorized into three main groups according to the maximum temperature produced (fluid outlet temperature). This classification includes solar ...

Nonlinear Temperature Regulation of Solar Collectors with a Fast Adaptive Polytopic LPV MPC Formulation Hugo A. Pipino a, Marcelo M. Moratob, Emanuel Bernardi, Eduardo J. Adamc, ...

A systematic experimental arrangement was employed to evaluate the temperature disparity between the cooling fluid and the solar panel collector (SPC). The fluid"s ...

With regulation, the output temperature of the solar collector is 50 °C. This temperature is independent of the variation of the irradiance. The PV source improves the solar thermal collector...

Nonlinear Temperature Regulation of Solar Collectors with a Fast Adaptive Polytopic LPV MPC Formulation ... The paper ends with a realistic solar collector simulation ...

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Scopus database has been used to collect the literature. The keywords such as flat plate collector, solar collector, solar water heater, passive technique, absorber tube, ...

Solar Collector Temperature Regulation

Published in Solar Energy, 2020. Abstract: Temperature control in solar ...

Annual simulation shows that the switchable PV/T collector can output 880.34 MJ of electrical energy in the non-heating season. The average temperature of the collector can ...

Abstract: Improving temperature reference tracking in solar collector fields is essential for enhancing the performance of solar thermal plants. Conventional control strategies are usually ...

A solar thermal collector collects heat by absorbing sunlight. The term "solar collector" commonly refers to a device for solar hot water heating, but may refer to large power generating ...

Abstract: Temperature control in solar collectors is a nonlinear problem: the dynamics of temperature rise vary according to the oil flowing through the collector and to the ...

This paper presented a new state-feedback MPC strategy, based on an adaptive set-based approach for systems with LPV models, for the outlet fluid temperature ...

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