

## عنوان مقاله:

Artificial Neural Network Based Model of Photovoltaic Thermal (PV/T) Collector

## محل انتشار:

کنفرانس بین المللی مدل سازی غیر خطی و بهینه سازی (سال: 1391)

تعداد صفحات اصل مقاله: 7

## نویسندگان:

Hamze ravaei - Ms. Student

saeid farahat - Associate Professor

faramarz sarhaddi

## خلاصه مقاله:

This paper presents a new application of Artificial Neural Network (ANN) for modeling a Photovoltaic Thermal collector (PV/T). Both thermal and electrical modeling performed. Ambient temperature of collector, cell temperature, fluid temperature at duct inlet, fluid velocity in duct, solar identity and time are used in the input layer and the thermal efficiency and electrical efficiency are outputs. Networks with different hidden layers used for modeling and performances evaluated with maximum correlation coefficient ( $R^2$ ), minimum root mean square error (RMSE) and low coefficient of variance (COV). The results showed that the ANN with 1 hidden Layer and 10 neurons in this layer has the best performance. The experimental data measured at meteorological conditions of Zahedan were used as training data. The Levenberg-Marquard backpropagation algorithm has been used for training network. The results of this work indicated that for evaluating PV/T performance researchers can use this method by conducting limited experiments

## کلمات کلیدی:

Artificial Neural Network, Photovoltaic thermal collector (PV/T), Thermal and electrical modeling

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/187726>

