

ABSTRACT

This research uses a flat plate parallel to analyze fluid flow rate towards efficiency. Flat-plate solar thermal Collectors flow parallel collect and absorb radiation from the Sun, the solar heat radiation is absorbed by collectors in convert into heat useful to heat the fluid (water) in the pipeline. Solar thermal collector consists of a copper-plate is painted black, copper pipe receiver made from black painted in parallel and form the basis of wood as a coating and also above its given glass. Design tools namely 0,87 m and width of 0,59 m with an angle of 15 °. This research aims to analyze the influence of the variation of the fluid flow speed of work flow against heat efficiency. Testing conducted with the five variable i.e. 0,1 lpm up to 0,5 lpm. Efficiency values obtained from testing that is 23%, 34%, 64,3%, 54,55%, and 47,62% debit and has a value of 0,3 lpm most improved efficiency that is 64,3%. From all the testing shows that the difference in temperature of the input and output of fluid (water) on the pipe of the recipients, as well as the speed of the fluid flow can affect the efficiency of flat-plate solar thermal collectors streams in parallel.

Keyword : *Flate plate solar thermal collectors flow parallel, flow rate variation, thermal efficiency.*