

# **Comparative Analysis of Energy Efficiency in Trickle and Spiral Type Solar Water Heater**

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## ***ABSTRACT***

*Solar energy is an alternative energy to replace fossil fuels. Solar energy can be use for water heater. Solar Water Heater is a heat transfer system that produces heat energy by utilizing solar radiation. This study aims to determine the outlet temperature of each type of solar water heater, also to find out the highest and optimal efficiency values in the use of solar water heaters. The data collection process are using solarimeter, fluxmeter, thermometer, stopwatch etc. The result from data processing using Microsoft excel shows, the highest outlet temperature is trickle type in the 3<sup>rd</sup> test at 38,3 degree celcius at 1 PM, and the lowest outlet form this type is at 28,8 degree celcius with 877,3 W/m<sup>2</sup> intensity of solar radiation at 9 AM. The highest efficiency result from the solar water heater is 16,58% based on the 3<sup>rd</sup> experiment using the trickle type, the lowest result is 5,04% on the 1<sup>st</sup> experiment using the spiral type*

**Key word :** *Solar Water Heater, Energy, Efficiency*