

EXPERIMENTAL ANALYSIS OF RENEWABLE ENERGY AS SOLAR AIR HEATER WITH ARTIFICIAL ROUGHNESS

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ABSTRACT

The sun's energy is really powerful, renewable and it is free. Performance analysis of solar air heater duct provided with artificial roughness in the form of rhombus shape geometry has been reported in the present thesis.

The result in this paper shows that the efficiency of solar air heater with artificial roughness is 34.67% whereas, the efficiency of solar air heater with plane plate is 25%. The increase in relative efficiency of roughened plate with respect to plane plate is 38.68%.

Hence, artificially roughened solar air heater performs better than the smooth ones under the same operating conditions.

KEYWORDS: Renewable Energy, Solar Air Heater, Artificial Roughness, Solar Energy