Chapter
9

CFD ANALYSIS ON FIN AND BAFFLE CONFIGURATIONS IN SOLAR AIR COLLECTOR

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Introduction

Carbon emissions with consistently increasing energy demand is a major concern for the modern world. Increasing energy demand with the lowest carbon emissions could be meet with the effective and efficient use of energy, utilizing renewable energy resources such as solar energy. The keystone for increment the efficiency is optimizing the design parameters.

Solar energy is one of the renewable energy resources that are clean, sustainable and have a great utilization potential. In addition to the production of electricity from solar energy, it is possible to utilize it in the form of thermal energy. Also, there are hybrid systems where electrical and thermal energy are produced simultaneously. Generating thermal energy from solar radiation is applicable and inexpensive. Due to the convenience and low cost of the application, it is possible to utilize solar energy for the production of heat energy in many areas. Solar collectors can be used both in domestic and industrial applications to produce heat energy from solar radiation.

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