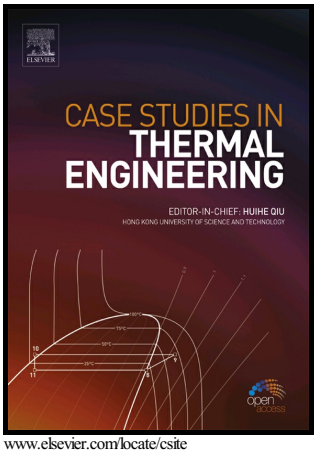

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Distribution of the temperature in the coaxial tube heat Exchanger with spherical end

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Abstract

A solution is presented for flow inside a heat exchanger. An analytical approach is developed and validated with a numerical simulation using ANSYS CFX code module taking account different boundary condition in the inlet. The temperature distribution of the laminar flow is presented, which is related to Reynolds number and the hydraulic diameter of the heat exchanger.

Keywords and phrases: Laminar Forced convection; Nusselt number; Horizontal heat exchanger with spherical end; Temperature distribution.

1. Introduction

Fluid flow problem either in tubes or in cylindrical annular have received considerable attention in recent years due to their importance industrial applications. Conventional heat transfer devices must be largely improved according to their specific applications, by modifying the structure, properties and the thermal conditions of the heat exchanger.

The complex geometry of the heat exchangers developed in recent years in the field of geothermal and domain recovery of solar energy (solar collector vacuum tube). The work of **Mnassri [1]** is based on an experimental study of **Desmons [2]** which is developing a code of calculation based on a coupling model between the finite element method to the border