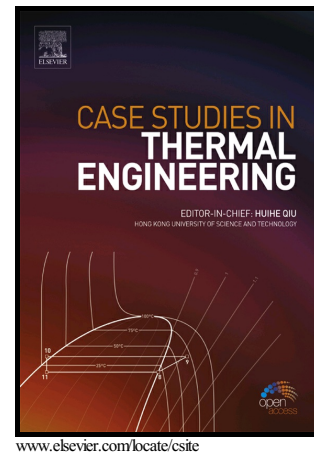


Author's Accepted Manuscript

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

Dhahri Imen, Lotfi Ammar



PII: S2214-157X(17)30011-4
DOI: <https://doi.org/10.1016/j.csite.2017.11.003>
Reference: CSITE233

To appear in: *Case Studies in Thermal Engineering*

Received date: 13 January 2017
Revised date: 5 October 2017
Accepted date: 7 November 2017

Cite this article as: Dhahri Imen and Lotfi Ammar, Distribution of the temperature in the coaxial tube heat Exchanger with spherical end, *Case Studies in Thermal Engineering*, <https://doi.org/10.1016/j.csite.2017.11.003>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

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

Dhahri Imen^{#1}, Lotfi Ammar^{#2}

[#]University of Tunis-El Manar
National Engineering School of Tunis
Applied Mechanics and Engineering Laboratory
1002 Le Belvedere, Tunis, ¹Tél: 97639612
¹imendh@gmail.com

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

Download English Version:

<https://daneshyari.com/en/article/7153453>

Download Persian Version:

<https://daneshyari.com/article/7153453>

[Daneshyari.com](https://daneshyari.com)