World Academy of Science, Engineering and Technology
International Journal of Civil and Architectural Engineering
Vol:10, No:02, 2016

Design and Analysis of Enhanced Heat Transfer Kit for Plate Type Heat Exchanger

Authors : Muhammad Shahrukh Saeed, Syed Ahmad Nameer, Shafiq Ur Rehman, Aisha Jillani

Abstract : Heat exchangers play a critical role in industrial applications of thermal systems. Its physical size and performance are vital parameters; therefore enhancement of heat transfer through different techniques remained a major research area for both academia and industry. This research reports the main purpose of heat exchanger with better kit design which plays a vital role during the process of heat transfer. Plate type heat exchanger mainly requires a design in which the plates can be easily be installed and removed without having any problem with the plates. For the flow of the fluid within the heat exchanger, it requires a flow should be fully developed. As natural laws allows the driving energy of the system to flow until equilibrium is achieved. As with a plate type heat exchanger heat the heat penetrates the surface which separates the hot medium with the cold one very easily. As some of the precautions should be considered while taking the heat exchanger accountable like heat should transfer from hot medium to cold, there should always be difference in temperature present and heat loss from hot body should be equal to the heat gained by the cold body regardless of the losses present to the surroundings. Aluminum plates of same grade are used in all experiments to ensure similarity. Size of all plates was 254 mm X 100 mm and thickness was taken as 5 mm.

Keywords : heat transfer coefficient, aluminium, entry length, design
Conference Title : ICCEAM 2016 : International Conference on Civil Engineering and Applied Mechanics
Conference Location : Istanbul, Türkiye
Conference Dates : February 15-16, 2016