



Hairpin Heat Exchangers Explained: Fundamentals of Double-Pipe, Multi-Tube and Finned Tube Heat Exchangers

By Prof Samuel Jorge Marques Cartaxo Ph D

Createspace, United States, 2015. Paperback. Book Condition: New. 254 x 178 mm. Language: English . Brand New Book ***** Print on Demand *****. The design of heat exchangers is crucial for the efficiency usage of energy in cooling or heating operations of industrial processes. The inappropriate heat exchanger sizing and analysis may cause environmental damage and significant energy waste in chemical process and power plants. This text covers the thermal-hydraulic design and performance rating of single-phase tubular (hairpin) heat exchangers of several types, including double-pipe, multi-tubes and finned heat exchangers. It presents a detailed compilation of single-phase convective and friction factor correlations established in the technical literature and by industrial practice, with special attention to their validity ranges and limiting assumptions to promote the most appropriate selection according to the specific design requirements. Highlighted features in this volume: Several worked examples explained step by step. A method for estimating the inner and outer wall temperatures on thick tubes. Special equations for estimating fluid exit temperatures in parallel flow and counterflow arrangements. A new method for estimating the pressure drop in double-pipe and multi-tube heat exchangers. Detailed fact sheet tables for most equations for estimating heat transfer coefficients, including errors bands. A...



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