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Numerical-Experimental Comparison of the Overall Coefficient of Heat Transfer in a Shell and Tube Heat Exchanger

Luis F. Aguas[1], Fernando J. García[2], Guillermo E. Valencia[3]*

[1]Student, Faculty of Mechanical Engineering, Universidad del Atlántico, Km 7 Antigua Vía a Puerto Colombia, Barranquilla, Colombia.
[2]Student, Faculty of Mechanical Engineering, Universidad del Atlántico, Km 7 Antigua Vía a Puerto Colombia, Barranquilla, Colombia.
[3]Assistance Professor, Faculty of Mechanical Engineering, Universidad del Atlántico, Km 7 Antigua Vía a Puerto Colombia, Barranquilla, Colombia.

Abstract : This article presents a way for evaluating the overall coefficient of heat transfer, analyzed in a tube and shell heat exchanger, with a single pass through the tubes and shell, where hot fluid circulates through the tubes and cold fluid through the shell. This analysis is based on the different operating conditions of the fluids, by varying their volumetric flows in a range of 40°C to 60°C, recording the data obtained experimentally for each run. Simulation of this process was also carried out with the Aspen HYSYS plus® software, and its results were compared with the data obtained experimentally.
Keywords : heat exchanger, tube and shell, global coefficient, heat transfer.

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