

عنوان مقاله:

Experimental and CFD study on thermal and fluid flow characteristics in helically coiled tubes

محل انتشار:

چهاردهمین کنگره ملی مهندسی شیمی ایران (سال: 1391)

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نویسندگان:

Reza Beigzadeh - *CFD Research Center, Chemical Engineering Department, Razi University, Kermanshah, Iran*

Babak Aghel

Reza Shabanian - *Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, Italy*

Masoud Rahimi

خلاصه مقاله:

Regarding to the wide research on heat transfer and flow characteristic in helically coiled tubes and also many applications in industrial processes, providing accurate numerical methods appearsto be very useful. This study reports experimental and Computational Fluid Dynamics (CFD) investigations on the heat transfer and pressure drop inside helically coiled tubes. The experimental data related to the heat transfer and pressure drop in helically coiled tubes withdifferent geometrical parameters (coil diameter and pitch) were measured. In the experiments, hot water was passed in the coiled tubes which were placed in a cold bath.CFD simulations were applied for coiled tubes by varying geometrical parameters such as coil diameter and tube pitch and their influence on heat transfer and pressure drop has been investigated. The experimentalresulted values were compared with the CFD simulation results by .means of the CFD package FLUENT

کلمات کلیدی:

coiled tubes, Computational Fluid Dynamics, heat transfer, pressure drop

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