عنوان فارسی مقاله:
تحليل ترمو-هیدرولیک مبدل های حرارتی چندلایه با جریان متقاطع

عنوان انگلیسی مقاله:
Thermo-hydraulic analysis of multi-row cross-flow heat exchangers

توجه!
این فایل تنها قسمتی از ترجمه میباشد. برای تهیه مقاله ترجمه شده کامل با فرمت ورد (قابل ویرایش) همراه با نسخه انگلیسی مقاله، اینجا کلیک کنید.
4. Conclusions

An efficient and accurate heat-transfer analysis procedure for a multi-row cross-flow heat exchanger of an air-conditioning system has been developed. The steady state 3-dimensional continuity, momentum, and energy equations are solved by using the finite volume method to obtain the thermal-hydraulic characteristics of multi-row fin and tube heat exchangers. Approximating the heat exchanger by a porous medium, of which the effective permeability and the inertial resistance factor are estimated by a separate three-dimensional finite-volume calculation, the overall flow field can be calculated fairly efficiently. By coupling the three-dimensional heat-transfer results for a periodic domain with the tube-by-tube method, the total heat transfer characteristics for the whole heat exchanger can be obtained. If the appropriate turbulent model is adapted in the study, the results will be better than laminar model.