

The Influence of Chevron Angle on Plate Heat Exchanger Thermal Performance with Considering Maldistribution

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Abstract : A new modification to the Strelow method of chevron-type plate heat exchangers (PHX) modeling is proposed. The effects of maldistribution are accounted in the resulting equation. The results of calculations are validated by reported experiences. The good accuracy of heat transfer performance prediction is shown. The results indicate that considering flow maldistribution improve the accuracy of predicting the flow and thermal behavior of the plate exchanger. Additionally, a wide range of the parametric study has been presented which brings out the effects of chevron angle of PHE on its thermal efficiency with considering maldistribution effect. In addition, the thermally optimal corrugation discussed for the chevron-type PHEs.

Keywords : chevron angle, plate heat exchangers, maldistribution, strelow method

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