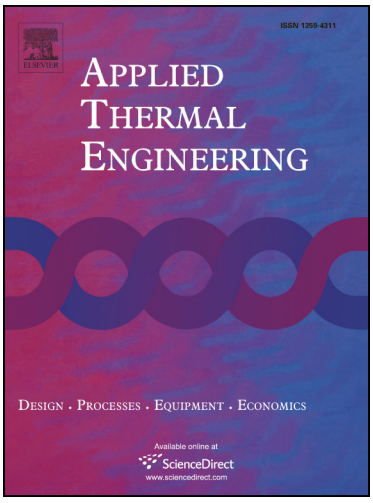

Heat Transfer Performance of Epoxy Resin Flows in a Horizontal Twisted Tube

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Abstract Usually, heat transfer coefficient of a high-viscosity fluid is very low at a small Reynolds number to avoid a huge pressure drop. Using twisted tube is an effect way to improve its heat transfer performance without obviously increasing its pressure drop. In this study, the heat transfer performance of epoxy resin, which is a kind of high-viscosity fluid, flowing in horizontal twisted tubes with different short-long-diameter ratios and twist ratios, was investigated. The impacts of Reynolds number, short-long-diameter ratios and twist ratios on heat transfer coefficients and pressure drops were discussed. The experimental results revealed that horizontal twisted tubes were commendable enhanced tubes for improving the heat transfer performance of the high-viscosity fluid. In addition, compared with twist ratios, the short-long-diameter ratios played a more significant role in heat transfer performance and pressure drop.

Keywords epoxy resin; twisted tube; heat transfer coefficient; pressure drop

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