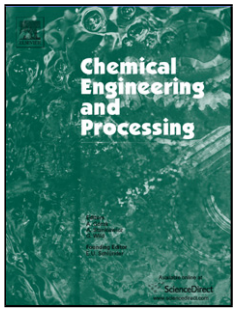

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A review of heat transfer and fluid flow mechanism in heat exchanger tube with inserts

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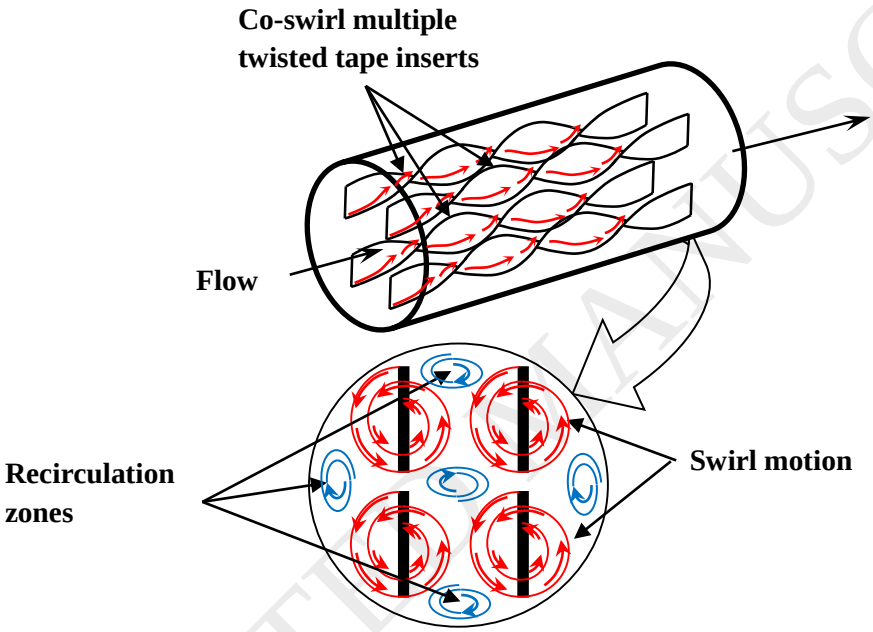
Graphical Abstract



Highlights

- Study presents detailed review of heat transfer and friction characteristics of heat exchanger tube with inserts.
- Heat transfer and fluid flow mechanisms are discussed.
- Thermo-hydraulic performance is examined for different insert geometries.

Abstract: Inserts are used to enhance the heat transfer rates between the two fluids in heat exchanger tubes. A variety of tube inserts such as twisted tape, wire coil, swirl flow generator have been investigated for their effect on heat transfer rates and fluid friction. This paper reviews the works pertaining to the application of different class of tube inserts in order to comprehend the prevailing mechanism of fluid flow and heat transfer. An attempt has been made to elucidate the