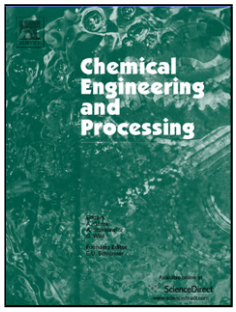

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Study on performance enhancement factors in turbulent flow of CNT/water nanofluid through a tube fitted with helical screw louvered rod inserts

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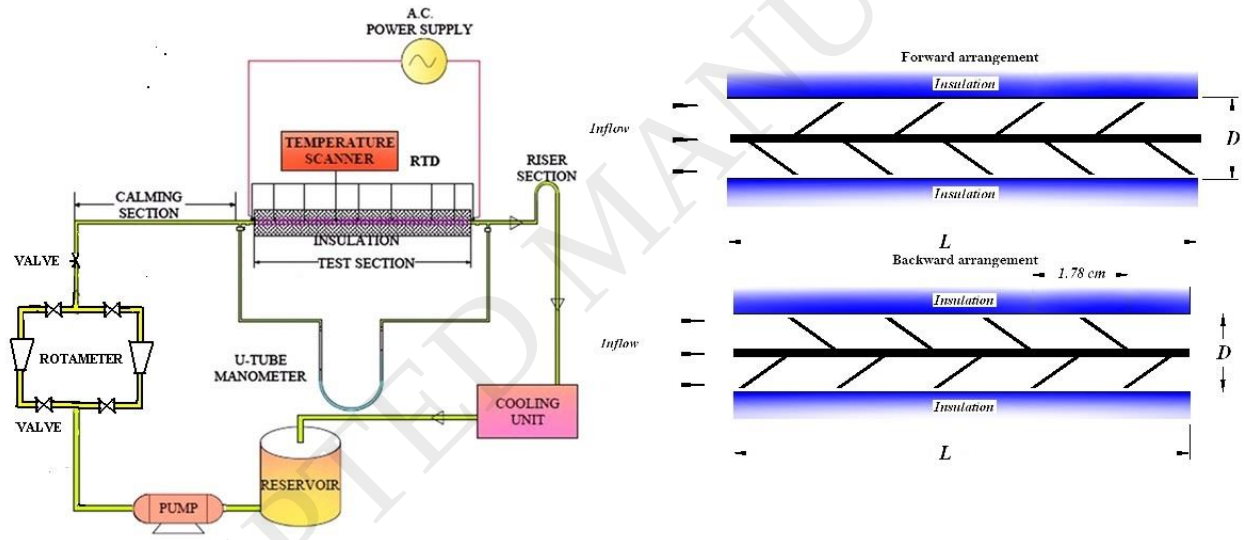
GRAPHICAL ABSTRACT



Highlights

1) CNT nanofluid of different volume fractions was used.
2) Thermal performance factor of three different inserts were compared
3) Helical Louvered rod inserts of pitch ratio Y = 1.78, 2.44 and 3 were used
4) Correlations were developed for forward and backward insert arrangement
5) Backward flow produced better performance compared to forward flow

ABSTRACT

The aim of this study is to investigate the enhancement of thermal performance characteristics in a plain tube fitted with helical screw louvered rod inserts using water and carbon nanotube (CNT)/water nanofluids of 0.1%, 0.2% and 0.5% volume concentration