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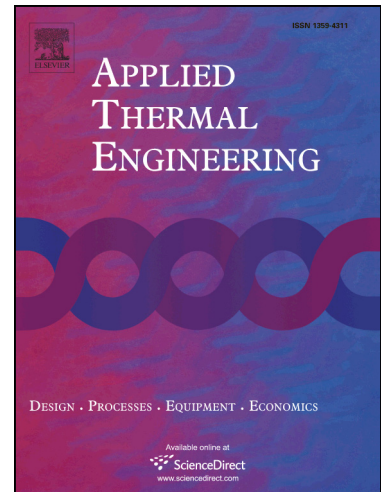
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## Experimental investigation of convective heat transfer in an inserted coiled tube type three fluid heat exchanger

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### Abstract

In the present study, an experimental investigation of a three fluid heat exchanger (TFHE) has been performed. The TFHE presented here is an improved version of double pipe heat exchanger, where a helical tube is inserted between two concentric straight tubes. The curvature ratio,  $\delta = 0.1315$ , pitch to inside diameter,  $p/d_{ci} = 2.88$  of the helical tube are taken constant during the test while range of coil side Reynolds number are varied between 9000 to 54000 during this investigation. Coil side Nusselt numbers are calculated using traditional Wilson plot technique and compared with the Nusselt numbers reported from literature for both parallel and counterflow configurations. Temperature distribution data has been obtained using analytical approach and experimental approach for three fluids. The effect of variation in volume flow rate

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