EFFECT OF FOULING IN HEAT EXCHANGER PERFORMANCE

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ABSTRACT

Compact heat exchangers (CHE) are very significant in heat transfer application for its design which includes high heat transfer coefficient and maximum temperature driving force between the hot and cold fluids. In the present study, the effect of fouling in plate fin heat exchanger performance is investigated. A plate fin heat exchanger is analysed for the offset strip fins, having rectangular cross section. The purpose of this study is to observe the change in effectiveness of the plate fin heat exchanger due to fouling and without fouling. The thermo-fluid analysis was carried out in two conditions: before fouling and after fouling in a cross flow of warm water side and cooled air side. Corrosion mechanism is chosen as a reference of fouling factor to evaluate for fouling condition. The study indicated that the efficiency of the heat exchanger is higher for a case when there is no fouling factor.