PERFORMANCE ANALYSIS OF SPIRAL PLATE HEAT EXCHANGER USING NANOFLUID ALUMINIUM (III) OXIDE, AL_2O_3

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ABSTRACT

The purpose of this final year project is to study on the spiral plate heat exchanger(SPHE) and determine a simple step by step calculation for construction a sizing a spiral plate heat exchanger(SPHE) unit and further enhance the heat transfer by using nanofluid aluminium (iii) oxide, Al_2O_3. Information on input parameter were taken from previous paper and case study that relevant and used in theoretical calculations for heat transfer enhancement. All the calculation had been compared and review and suitable to be used theoretical calculation. Heat transfer coefficient using base fluid was compared with heat transfer coefficient using nanofluid aluminium (iii) oxide, Al_2O_3 . The result base on ratio overall heat transfer coefficient to surface area of the heat exchanger show that heat exchanger using nanofluid as a service fluid have higher heat transfer per area than heat exchanger using base fluid only. Further discussion can be review in this final year project.

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