

ABSTRACT

Heat exchanger (HX) is a device that provide heat exchange between two fluids that have temperature difference. Heat exchanger mostly applied to a process, power plant, transportation, air conditioning and refrigeration. Generally heat exchangers have many tube in it (multi tube). In this study, the heat transfer coefficient between single tube and multi tube with the same heat transfer surface area was compared. The dimension of single tube heat exchanger is 40 cm length and 9,5 cm diameters. While on multi tube heat exchanger consisted at ten tubes with 0,95 diameters and 40 cm length. The heat exchanger is submerged in low temperature water and the ambient air is streamed by fan with 3,2 g/s, 2,6 g/s, and 2 g/s flow rate. The experiment was performed for two hours and the temperature of ambient, outlet air, and water were recorded using T-type thermocouple. The heat transfer coefficient were then analyzed. The result shows that heat transfer coefficient on multi tube heat exchanger was 26 % higher than single tube heat exchanger.