

ABSTRACT

This research aims to predict the maximum heat loss coefficient on the surface by varying the thickness and temperature of the heater and knowing large surface temperature after isolation.

The study used a horizontally insulated plate with simulated and experimental methods. For the plate material used stainless steel and for insulating used *polyfoam*. The experiment was done with 2 thickness variations of 2cm and 4cm. Data retrieval is taken one by one with a variation of temperature 35-100 °C to reach steady state. The data is taken including surface temperature, heat transfer and the value of heat loss.

Based on simulated results and experiments gained that with greater thickness the resulting heat loss is smaller. the value of heat loss (Q) of real data is greater than the simulation data, at 2 cm thick the maximum heat loss is 0.353 J with a temperature of 39.7 °C. While the heat loss data is 0.37 J with a temperature of 41.6 °C. At 4cm thick the maximum heat loss simulation data is 0.21 J with a temperature of 36.06 °C and for real data the maximum heat loss is 0.22 J with a temperature of 36.7 °C.

Keywords: heat loss, thickness, simulation, experiment.