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# Thermal Analysis of Heat Transfer from a Flat Plate Impinging Cold Air Jet

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***Abstract*—The jet impingement is widely used in engineering systems such as gas turbine, rocket launcher, and high density electrical equipment, and combustion work. This research has been done for the experimental analysis of the heat transfer from a hot flat plate by cold air jet with different sizes. The rate of heat transfer from the plate with respect to velocity and diameter of the jet was studied. It was observed that the Nusselt number changes with respect to jet size. Reynolds number affects the heat transfer rate with constant pressure and valve velocity with respect to time. The results show that with the increase in the heat transfer rate Reynolds number increases. Normally the flow with Re > 3500 is turbulent having more mixing rate.**

***Keywords*—heat transfer, jet air technique, impingement, convection, cooling, Reynolds number**