EXPERIMENTATION AND THERMAL ANALYSIS OF CYLINDRICAL AND CONICAL SHAPED FINS

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ABSTRACT

The present project gives the thermal analysis of the cylindrical and conical profile of the fin by experimentally. The dimension of both fins is same. Length of the fin is 116 mm and diameter of the fin is 18 mm. In this project, we have chosen two profile of fin-like cylindrical, and conical. The material of fin is same for both profile which is alluminum alloy. Fins are prepared by CNC machine. We have conducted the experiment for free convection. We have found the temperature distribution for all the cases and after calculation of data, we have compared the heat transfer coefficient, heat transfer rate, Nusselt number (Nu), effectiveness and efficiency of both profile of the fin. We have found from an experiment, effectiveness is maximum for the cylindrical profile, but efficiency is lowest and in case conical efficiency is maximum but effectiveness is very less.

KEYWORDS: *Cylindrical, Conical Profile, Experimentally Dimension*