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Experimental Study of Heat Transfer Enhancement Using Protruded Rectangular Fin

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Abstract : The investigation deals with the study of heat transfer enhancement using protruded square fin. This study is enough to determine whether protrusion in forced convection is enough to enhance the rate of heat transfer. It includes the results after performing experiments by using a plane rectangular fin of aluminum material and the same dimension rectangular fin of the same material but having protruded circular shape extended normally. The fins made by a sand casting method. The results clearly mentioned that the protruded surface is effective enough to enhance the rate of heat transfer. This research investigates a modern fin topologies heat transfer characteristics that will clearly outdated the conventional fin to increase the rate of heat transfer. Protruded fins improve the rate of heat transfer compared to solid fin by varying shape of the protrusion in diameter and height.

Keywords : heat transfer enhancement, forced convection, protruted fin, rectangular fin
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