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FOAM FINNED DOWN FLOW TYPE AUTOMOTIVE RADIATOR RATING AND SIZING

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ABSTRACT

Radiator is ubiquitous cooling module of engine cooling system in automobiles. Recent advancement in engine for power forced engine cooling system is to improve its efficiency and also reduce fuel consumption along with control of engine emission to meet environmental pollution norms. It prompted investigation of alternative materials for radiators to improve its efficiency. Carbon foam was found to be one of the implementable alternative materials for fins in radiators core by considering primary factors which influence radiator performance. The most common radiator design glitches are rating and sizing. In this article, ε-NTU method is described to estimate heat transfer calculations for foam finned down flow type radiator. An application in Microsoft Excel™ is developed to assist in the calculations and analysis of radiator parameters and heat rejection for predefined size.

KEYWORDS: Down flow radiator, Carbon foam, Heat transfer, Thermal conductivity (TC)

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