

EXPERIMENTAL AND ONE DIMENSIONAL INVESTIGATION ON NANOCELLULOSE AND ALUMINIUM OXIDE HYBRID NANOFLUID AS A NEW COOLANT FOR RADIATOR

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Abstract. Automotive engine cooling system takes care of excess heat produced during engine operation. It regulates engine surface temperature for engine optimum efficiency. Recent advancement in engine for power forced engine cooling system to develop new strategies to improve its performance efficiency. Also to reduce fuel consumption along with controlling engine emission to mitigate environmental pollution norms. This paper throws light on parameters which analyse the radiator performance at high coolant temperature that is below 80° C and the comparison data from experimental and one-dimensional analysis data. A literature review has been done and ways were identified how to enhance radiator performance. In addition, A coolant is normally chemically combined with a high boiling point liquid to form a compounded fluid. This compounded fluid function as an antifreeze agent against extremely cold conditions and as well as solves the problem of overheating during hot weather. A coolant with relatively high boiling temperature can cool faster as the engine gets hotter. During an operation of an internal combustion engine, about a third of heat energy produced are considered as unwanted heat that ends up in the cooling system. Thermal conductivity values are maximum at 0.9% concentrations

Keywords: Automotive engine cooling system, Radiator.