

A
Project
Report on

**EVALUATION OF THERMO-PHYSICAL PROPERTIES OF ETHYLENE-
GLYCOL BASED AUTOMOTIVE COOLANTS WITH MULTI WALLED
CARBON NANO-TUBES (MWCNT'S)**

**A Project report submitted for the partial fulfillment of the requirements for award of
Degree of
BACHELOR OF TECHNOLOGY
IN
MECHANICAL ENGINEERING**

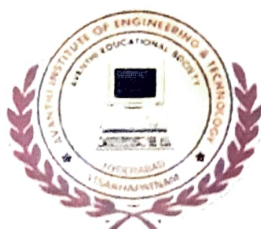
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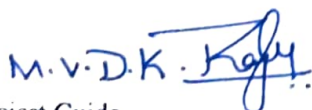
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CERTIFICATE

This is to certify that the project entitled “**EVALUATION OF THERMO-PHYSICAL PROPERTIES OF ETHYLENE-GLYCOL BASED AUTOMOTIVE COOLANTS WITH MULTI WALLED CARBON NANO-TUBES (MWCNT'S)**” is the record of the work carried out by **K.KUMAR ARUN VENKAT (19185A0325), G.UMA MAHESWARA RAO (19815A0315), G.GANGADHAR (19815A0317), B.PRADEEP (18811A0305)** students of final year B.Tech in the department of Mechanical engineering. This work is done for the partial fulfillment for the award of BACHELOR OF TECHNOLOGY during the year 2021-2022.



Project Guide

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ABSTRACT

This article summarizes research involving the evaluation of the thermo-physical properties of ethylene-glycol-based automotive coolants dispersed multi-walled carbon nano-tubes. Nano-fluids were prepared with Ethylene glycol and water as base fluids in 20:80, 30:70 and 50:50 ratios. Base fluids of three categories were dispersed with oxidized MWCNTs in the weight fractions of 0.125, 0.25, and 0.5 percentages to check the influence on the thermo-physical properties. Significant enhancement of thermal conductivity by 15 to 24% was observed when the base fluids are dispersed with MWCNTs.

Keywords: Thermal Heat Transfer Fluids, CNT, Nano-fluids, Automotive Applications