

## Documents

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**MHD flow analysis with water-based cnt nanofluid over a non-linear inclined stretching/shrinking sheet considering heat generation**  
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### Abstract

This paper presents a numerical analysis of the magnetohydrodynamic (MHD) flow of Carbon nanotube (CNT) nanofluid over a non-linear inclined stretching/shrinking sheet with heat generation and viscous dissipation. In this model, we used SWCNT-H<sub>2</sub>O and MWCNT- H<sub>2</sub>O as Nano liquids. By using the self-similar numerical solutions, the governing non-linear momentum and thermal boundary layer equations rehabilitated to ordinary differential equations. The resultant mathematical model is numerically solved with the assistance of R-K fourth order with shooting technique. Numerical exploration is completed by inspecting the various values of a magnetic field parameter, non-linear stretching/shrinking parameter, Richardson number, Eckert number, effective Prandtl number and a suction parameter for the flow and heat transfer which are obtainable through graphs. It is found that SWCNT-H<sub>2</sub>O nano liquid produce high heat transfer compared to MWCNT- H<sub>2</sub>O nano liquid. The validity of calculated results is analysed through the qualified level. Copyright © Italian Association of Chemical Engineering - AIDIC. All rights reserved.

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