International Journal of Applied Mathematics
& Statistical Sciences (IJAMSS)
ISSN(P): 2319-3972; ISSN(E): 2319-3980
Vol. 8, Issue 2, Feb - Mar 2019; 43-58

International Academy of Science,
Engineering and Technology
Connecting Researchers; Nurturing Innovations

THERMAL RADIATION AND CONVECTIVE HEATING ON HYDROMAGNETIC BOUNDARY LAYER FLOW OF NANOFLUID PAST A PERMEABLE STRETCHING SURFACE

Ajala O. [1]***, Adegbite P***[2]***, Abimbade S. F***[3] ***& Obalalu A. M***[4]

[1,2]*Research Scholar, Department of Pure and Applied Mathematics, Ladoke Akintola University of Technology, Ogbomoso, Nigeria*

[3,4]*Research Scholar, Department of Statistics and Mathematical Sciences, Kwara State University, Malete, Kwara, Nigeria*

ABSTRACT

This research work studies the hydromagnetic boundary layer flow of Nanofluid past a permeable stretching surface with the introduction of both thermal radiation and Newtonian heating. The Nanoparticles considered here are Copper (Cu) and Alumina (Al_2O_3) while water served as the base fluid. The derived dimensionless governing equations for this investigation are solved using a set of codes on the MAPLE software. The effects of significant physical parameters on velocity, temperature, skin friction and Nusselt number profiles within the boundary layer of the two water-based Nanofluids are investigated with interpretations from the graphs.

KEYWORDS*: Boundary Layer, Thermal Radiation, Nanofluid, Stretching Surface*

Article History

Received: *17 Jul 2018* **|** ***Revised:*** *06 Mar 2019* **|** ***Accepted:*** *31 Mar 2019*