



Thermal Radiation, Heat Source/Sink and Work Done by Deformation Impacts on MHD Viscoelastic Fluid over a Nonlinear Stretching Sheet

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Abstract:

This work is focused on the effects of heat source/sink, viscous dissipation, radiation and work done by deformation on flow and heat transfer of a viscoelastic fluid over a nonlinear stretching sheet. The similarity transformations have been used to convert the governing partial differential equations into a set of nonlinear ordinary differential equations. These equations are then solved numerically using a very efficient implicit finite difference method. Favorable comparison with previously published work is performed and it is found to be in excellent agreement. The results of this parametric study are shown in several plots and tables and the physical aspects of the problem are highlighted and discussed

Keywords:

Flow and Heat Transfer; Second Grade Fluid; Nonlinear Stretching Sheet; Heat Source; Radiation

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