



**OSCILLATING FLOW OF A VISCOELASTIC FLUID UNDER
EXPONENTIAL PRESSURE GRADIENT WITH
HEAT TRANSFER**

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Abstract

The oscillating flow of viscoelastic fluid between two parallel horizontal plates is examined. Initially, the flow is caused by an exponential pressure gradient parallel to the boundary of fluid. The partial differential equation governing the flow and heat transfer characteristics are converted into second order ordinary differential equation. The effect of viscoelastic, porosity and suction parameter are analyzed graphically for velocity and temperature distribution. In the analysis, it is revealed that the velocity and temperature profile decreases significantly with increase in viscoelastic and suction porosity. Also, the effects of porosity parameter on the fluid characteristic are discussed in full detail.

Keywords and phrases: oscillating flow, viscoelastic fluid, Maxwell model, pressure gradient.

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