

# The MHD Flow in a Region Partially Filled With Porous Medium and Bounded By Two Periodically Heated Oscillating Plates

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## **Abstract**

The flow of a conducting liquid between two parallel periodically heated oscillating plates has been studied. The space between the plates has been divided into two regions (i) clear fluid region and (ii) porous medium region. It is assumed that in region (i) the flow is governed by Navier-Stokes equations while in the region (ii) by Brinkman equations. At the interface the velocity, temperature and skin-friction are assumed to be continuous. A transverse uniform magnetic field is applied normal to the plane. Method of separating of variables is used to solve the resulting equations. The expressions for velocities and temperature fields are obtained. The effects of permeability and magnetic field on the flow characteristic have been studied through several graphs.

**Key words:** Magnetohydrodynamics, Porous medium, Oscillating plates, Periodic heating, Heat transfer.