**ABSTRACT**

The effect of thermosolutal convection on linear stability of an incompressible fluid in a horizontal fluid/porous interface in the presence of a vertical magnetic field has been analyzed. Asymptotic solution is obtained for rigid boundaries using normal mode analysis and the analysis is restricted to long wave approximations. The influence of various non-dimensional parameters such as Chandrasekhar number, magnetic Prandtl number, Schmidt number, Prandtl number, porosity, wave number and depth ratio on stability characteristics of flow field are represented numerically.