**ABSTRACT**

The present study investigates an analytical solution of free convective unsteady fluid flow in the presence of thermal diffusion and chemical reaction past a vertical porous plate with heat source dependent in slip flow regime taking into account the radiation, chemical reaction and temperature gradient dependent heat source. The flow is considered under the influence of magnetic field applied normal to the flow. Approximate solutions for velocity, temperature and concentration fields are obtained using perturbation technique. The effects of various parameters are studied and are shown through graphs