

## **Effects of non-uniform heat source and magnetic field on the flow and heat transfer over a nonlinearly stretching sheet with suction**

### **ABSTRACT**

A theoretical study has been presented to describe the flow and heat transfer in the boundary layers on a nonlinearly stretching sheet with a variable wall temperature and suction, in the presence of magnetic field and non-uniform heat source. The governing partial differential equations are converted into ordinary differential equations by similarity transformation, which is then solved numerically using the shooting method. Results for the skin friction coefficient, local Nusselt number, velocity profiles as well as temperature profiles are presented through graphs and table for several sets of values of the parameters. The effects of the parameters on the flow and heat transfer characteristics are thoroughly examined.

**Keyword:** Heat transfer; Non-uniform heat source; Nonlinear stretching; Skin friction; Variable wall temperature