Volume dependent strength of porous materials and structures

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Chemical reaction, heat and mass transfer over an accelerating surface with heat source and thermal stratification in the presence of suction and injection are studied. The governing partial differential equations of this problem, subjected to their boundary conditions are transformed and solved numerically by applying R.K. Gill method. It has been observed that in the presence of mass diffusion (1) Due to the suction of the accelerating surface the increase of the thermal stratification effect decelerates the fluid motion and increases the temperature distribution and concentration of the fluid along the surface and for injection, it accelerates the fluid motion and decreases the temperature distribution and concentration of the fluid along the accelerating surface (2) Due to the increase of the values of the thermal stratification parameter with constant suction and injection the skin friction and rate of mass transfer decrease and the rate of heat transfer of the fluid increases with an increase of the strength of the chemical reaction.

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