infinite vertical porous moving plate in a porous medium has been performed in the preceding section. This enables us to carry out the numerical calculation for the distribution of the velocity, temperature and concentration across the boundary layer for various values of the parameters. In the present study we have to select *t=1.0, n=0.5, ϵ=0.2, A=0.5, Up=0.5* while *Kr, Pr, Gr, Gm, ξ, k, M, Ra* and *R* are varied over a range, which listed in the figure legends. For different value of permeability of the porous medium K, the velocity profile is plotted in Figure 1: Here we find that as the values of permeability of the porous medium K increases then it leads to the velocity increase. The variety of velocity and concentration profiles with y for various esteems in chemical reaction parameter Kr is appeared in the Figure 2: and Figure 14: these figures

mirror that with increment in Kr there is diminishing in fluid velocity and concentration. For different value of Sc on the velocity is shown in the Figure 3: and Figure 15: Here we find that as the values of Schmidt number Sc increase then it leads to velocity and concentration decreases. The values of the Schmidt number are chosen to represent the presence of various species Oxygen (0.60), Carbon dioxide (Sc=0.94), the values of other parameters are chosen arbitrarily. The numerical estimations of the rest of the parameters are picked self-assertively. For different values of Ra on the velocity and temperature show in the Figure 4: and Figure 9: here the values of Ra increase then it leads to velocity and temperature decreases. Figures 5: and Figure 13: depicts the effect of Eckert number Ec on the velocity temperature profiles .It is revealed that velocity scores increases and diminishing in temperature with the increasing of the Eckert number Ec. Eckert number physically is a measure of frictional heat in the system. The variation in velocity profile with y for different values in Modified Grashof number is shown in Figure 6: The modified Grashof number Gm defines the ratio of the species buoyancy force to the viscous hydrodynamic force. As expected, the fluid velocity increases as Grashof number Gm increases. The influence of Magnetic parameter on velocity profiles is as shown in the Figure 7: various values of M increases then it leads to velocity increases. The variation in velocity profile with y for various values in Grashof numbers are shown in Figure 8: This figure reflects that with increase in Gr there is increase in fluid velocity due to improvement of the buoyancy force. For different values of the Prandtl number Pr, the Temperature profile is plotted in figure 10: Here we find that as the values of Prandtl number Pr increase then the Temperature profile decreases. To be realistic, the numerical values of Prandtl number Pr are chosen as Pr=0.71, and Pr=7.00, which correspond to air and water at 20 degree Celsius's respectively. In the Figure 11: here we found that the values of R increase then it leads to temperature increases. In the Figure 12:the temperature decreases with increase of heat generator parameter ξ. Numerical values of the Skin-friction coefficient τ_w Nusselt number N_u Sheer wood number $S_h$are shown below *t=1,n=0.5,ϵ=0.03 ,A=0.5,ξ=0.3* From the

Table: 1 depict the effect of the Prandtl number *Pr* Schmidt number Sc, heat generation parameter (ξ), Eckert number (*Ec*), radiation absorption(Ra) ,chemical reaction (Kr) and reaction rate R on the Skin friction coefficient τ_w and Nusselt number respectively. It is observed from this table that as Pr and Ra increase then it leads to skin friction coefficient τ_w and Nusselt number N_u decreases. Whereas *R* increases it leads to skin friction and Nusselt number increases. Also Skin friction increases with increase of *M, ξ, GM, Gm,* and *Ec*. But Skin friction decreases with increase of *Sc.* From the Table: 3 shows that the effect of the Schmidt number Sc and chemical reaction *Kr* for different values on Sherwood S_h. It is observed from the table that as Sherwood S_h decreases with increase of *Sc* and *Kr*.

5. VALIDATION OF THE RESULTS:

Table 1: Comparison of the accuracy of the present results with the previous results G. Jithender Reddy *et al* [8]

Previous result by G. Jithender Reddy *et al* [8]							Our present results					
Increasing parameter	U	T	C	τ_w	N_w	S_h	U	T	C	τ_w	N_w	S_h
Ec	Inc	Inc		Inc	Dec		Inc	Dec		Inc	Dec	
M	Dec			Inc	Inc		Dec			Inc		
Pr		Dec		Dec				Dec		Dec	Dec	
Sc			Dec	Dec		Inc			Dec	Dec		Dec
K	Inc			Inc			inc			Dec		
Kr	Dec		Dec	Dec		Inc	Dec	Dec	Dec	Dec		Dec
Gm	Inc			Inc			Inc			Inc		
G r	Inc			Inc			Inc			Inc		
R	Dec		Dec	Dec	Inc		Inc	Inc		Inc	Inc	

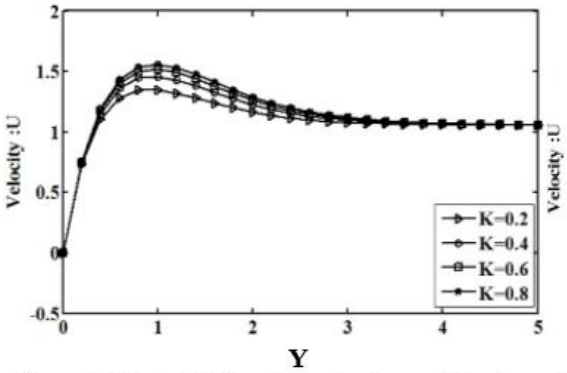

Figure 1: Effect of K for different values on Velocity

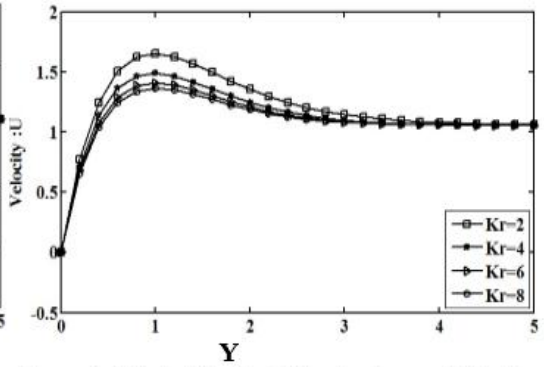

Figure 2: Effect of Kr for different values on Velocity

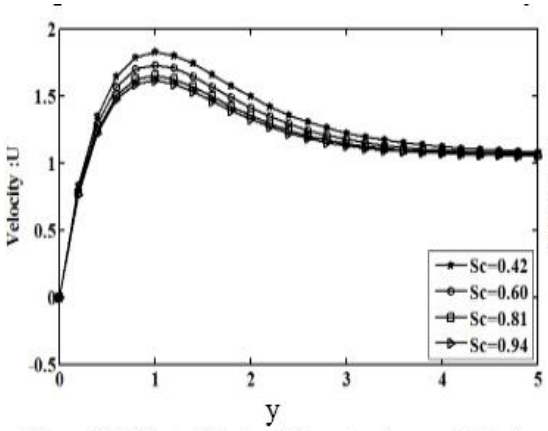

Figure 3: Effect of Sc for different values on Velocity

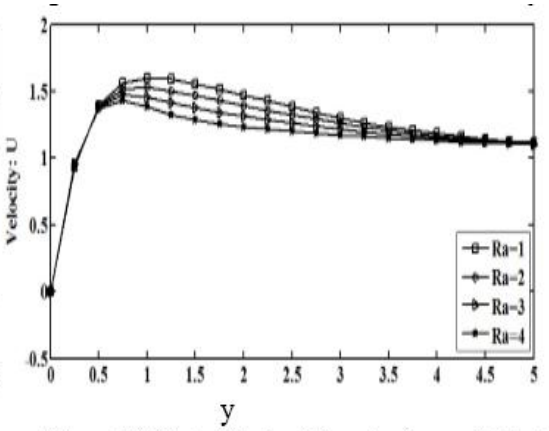

Figure 4: Effect of Ra for different values on Velocity

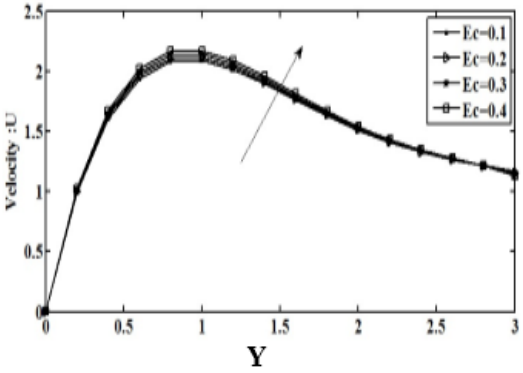

Figure 5: Effect of Ec for different values on Velocity

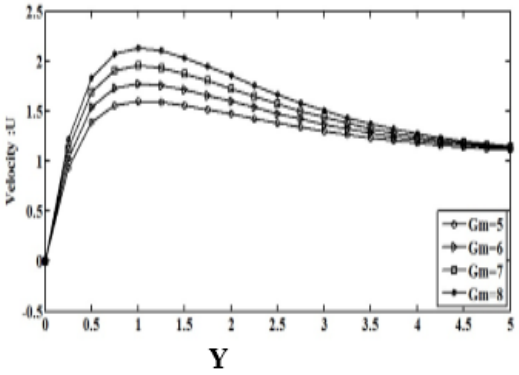

Figure 6: Effect of Gm for different values on Velocity

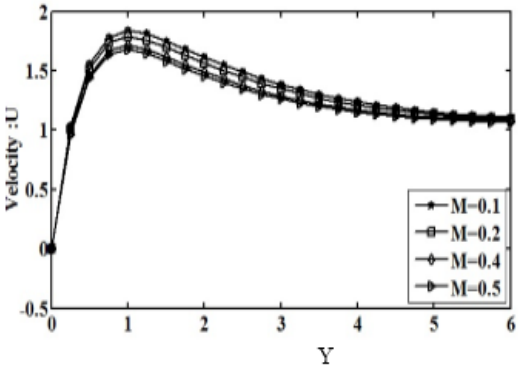

Figure 7: Effect of M for different values on Velocity

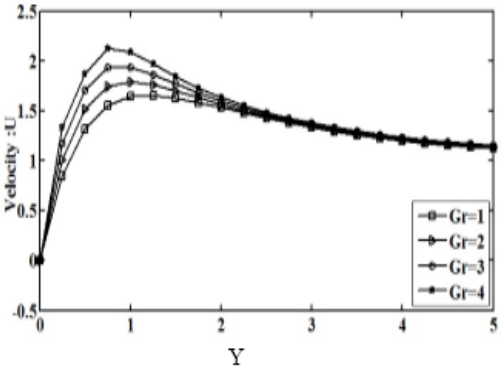

Figure 8: Effect of Gr for different values on Velocity

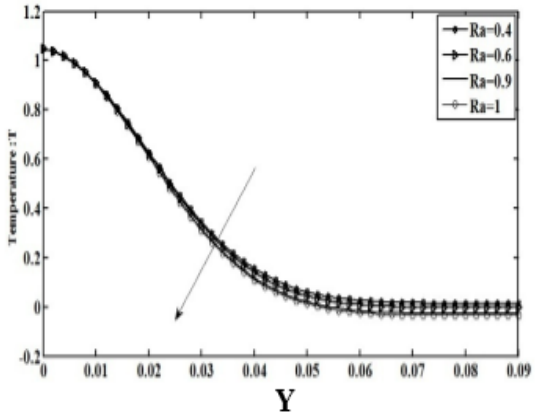

Figure 9: Effect of Ra for different values on Temperature

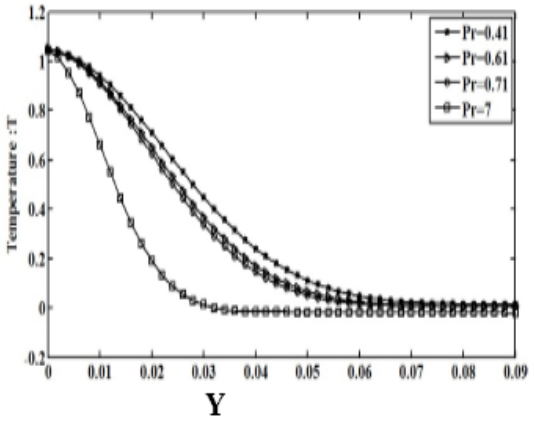

Figure 10: Effect of Pr for different values on Temperature

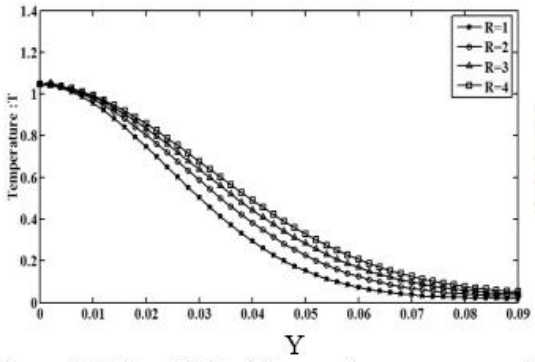

Figure 11: Effect of R for different values on Temperature

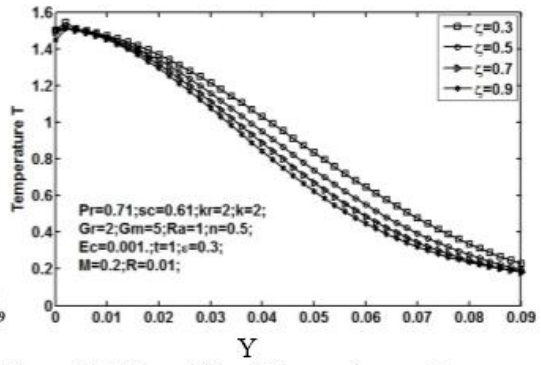

Figure 12: Effect of ξ for different values on Temperature

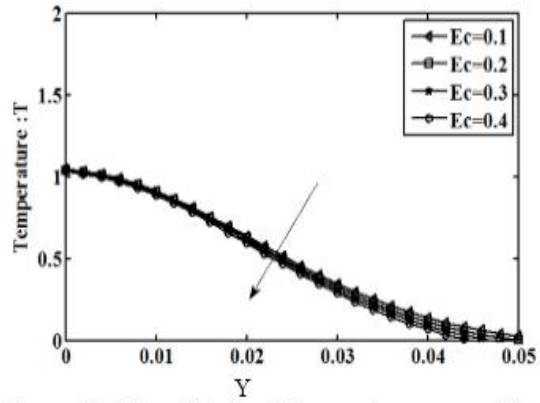

Figure 13: Effect of Ec for different values on Temperature

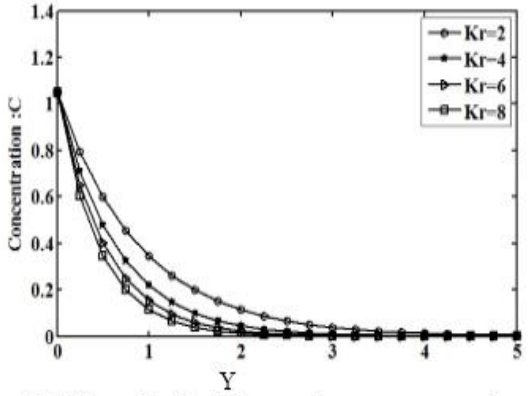

Figure 14: Effect of Kr for different values on concentration

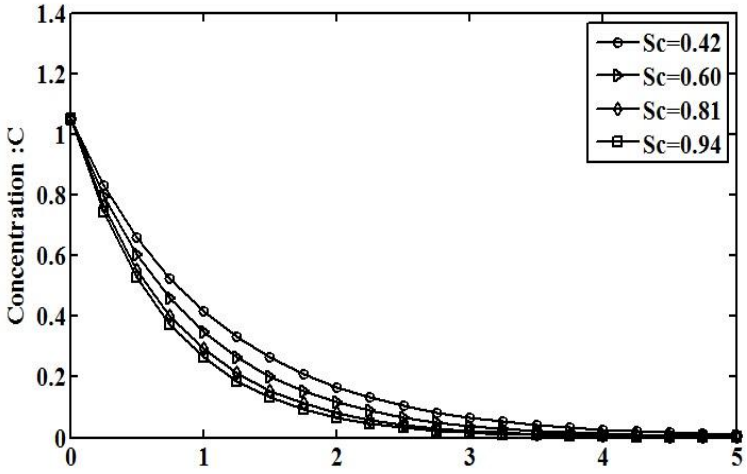

Figure 15: Effect of Sc for different values on Concentration

Table 3: Effect of Sc and Kr on Sherwood numbers		
Sc	Kr	S_h
0.42	2	-0.9319
0.60	2	-1.1138
0.94	2	-1.3941
0.60	2	-1.1138
0.60	4	-1.5738
0.60	6	-1.9270

Table 2: Effect of Pr,Sc,ξ,Ec,Ra,Kr,M,KGr,Gm and R on Skin friction τ_w and Nussle number N_w

Pr	SC	Ec	Kr	R	Ra	Gr	Gm	K	M	ξ	τ_w	N_w
0.71	0.60	0.001	2	1	1	2	4	0.2	0.2	0.3	4.6258	-18.4197
1											4.5777	-23.3714
7											4.0439	-113.7771
	0.42										4.6389	-
	0.81										4.5985	-
	0.94										4.5806	-
		0.003									4.7829	-18.4197
		0.004									4.8614	-18.4206
		0.005									4.9400	-18.4216
			4								4.5462	-
			6								4.4777	-
			8								4.4233	-
				2							4.6772	-13.7434
				3							4.7076	-11.3788
				4							4.7292	-9.9071
					0.4						4.6929	-16.4340
					0.6						4.6705	-17.0953
					0.9						4.6370	-18.0871
						1					4.6185	-
						3					4.6331	-
						4					4.6403	-
							2				4.0250	-
							3				4.3254	-
							5				4.9262	-
								0.4			4.1975	-
								0.6			4.0558	
								0.8			3.9908	-
									0.1		4.6092	-
									0.4		4.6589	-
									0.5		4.6753	-
										0.5	4.6267	-
										0.7	4.6342	-
										0.9	4.6443	-

CONCLUSION

1) Velocity and temperature profiles decrease with the increase of Thermal radiation parameter
2) Concentration profiles decrease near the plate with the increase of chemical reaction parameter Kr and Schmidt number Sc.
3) An increase in K, Gm, $\in$ and R leads to increase in both velocity and temperature.
4) Velocity profile decrease with the increase of Eckert number (Ec) and Magnetic field parameter M.
5) Sherwood S_h profile decrease with the increase of chemical reaction parameter Kr and Schmidt number Sc. Skin friction profile decreases with the increase of Eckert number (Ec).However, Nusselt number remains unchanged.

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APPENDICES

$$d = i\sqrt{\frac{\xi}{\Gamma}},\ f = \sqrt{ScKr}, Q = \sqrt{s}, l = \sqrt{Sc(Kr+n)}, m = \sqrt{\frac{n-\xi}{\Gamma}}, q = \sqrt{s+n}$$

$$N_1 = \frac{-R_a}{\Gamma f^2 + \eta},\ N_2 = \frac{-R_a}{\Gamma l^2 - (n-\eta)},\ N_3 = \frac{-Gr(1-N_1)}{d^2 - S},\ N_4 = \frac{-\left(GrN_1 + Gm\right)}{d^2 - S},$$

$$N_5 = \frac{-d^2 N_3^2}{4\Gamma d^2 + \xi},\ N_6 = \frac{-f^2 N_4^2}{4\Gamma f^2 + \xi},\ N_7 = \frac{-sA_1^2}{4\Gamma S + \xi},\ N_8 = \frac{-2\,fdN_3N_4}{\Gamma(d+f)^2 + \xi},$$

$$N_9 = \frac{-2\,fdA_1N_4Q}{\Gamma(Q+f)^2 + \xi},\ N_{10} = \frac{-2dA_1N_3Q}{\Gamma(Q+d)^2 + \xi}\ N_{11} = \frac{-GrN_5}{d^2 - S},\ N_{12} = \frac{-GrN_6}{4f^2 - S},$$

$$N_{13} = \frac{-GrN_7}{3S},\ N_{14} = \frac{-GrN_8}{(d+f)^2 - S},\ N_{15} = \frac{-GrN_9}{(Q+f)^2 - S},\ N_{16} = \frac{-GrN_{10}}{(Q+d)^2 - S},$$

$$N_{17} = \frac{-GrA_2}{(d)^2 - S},\ N_{18} = \frac{-Gr(1-N_2)}{m^2 - (S+n)},\ N_{19} = \frac{-GrN_2 - Gm}{l^2 - (S+n)},\ N_{20} = \frac{-2dmN_3N_{18}}{\Gamma(d+m)^2 - (n-\xi)},$$

$$N_{21} = \frac{-2dlN_3N_{19}}{\Gamma(d+l)^2 - (n-\xi)},\ N_{22} = \frac{-2dqN_3A_4}{\Gamma(d+q)^2 - (n-\xi)},\ N_{23} = \frac{-2\,fmN_4N_{18}}{\Gamma(f+m)^2 - (n-\xi)},$$

$$N_{24} = \frac{-2\,flN_4N_{19}}{\Gamma(f+l)^2 - (n-\xi)},\ N_{25} = \frac{-2dqN_4A_4}{\Gamma(f+q)^2 - (n-\xi)},\ N_{26} = \frac{-2QmN_{18}A_1}{\Gamma(Q+m)^2 - (n-\xi)},$$

$$N_{27} = \frac{-2QlN_{19}A_1}{\Gamma(Q+l)^2 - (n-\xi)},\ N_{28} = \frac{-2QqA_4A_1}{\Gamma(Q+q)^2 - (n-\xi)}\ N_{29} = \frac{-GrN_{20}}{(d+m)^2 - (S+n)},$$

$$N_{30} = \frac{-GrN_{21}}{(d+l)^2 - (S+n)},\ N_{31} = \frac{-GrN_{22}}{(d+q)^2 - (S+n)},$$

$$N_{32}=\frac{-GrN_{23}}{(f+m)^2-(S+n)}\ N_{33}=\frac{-GrN_{24}}{(f+l)^2-(S+n)},\ N_{34}=\frac{-GrN_{25}}{(f+q)^2-(S+n)},$$

$$N_{35}=\frac{-GrN_{26}}{(Q+q)^2-(S+n)},\ N_{36}=\frac{-GrN_{27}}{(Q+l)^2-(S+n)},\ N_{37}=\frac{-GrN_{28}}{(Q+q)^2-(S+n)},$$

$$N_{38}=\frac{-GrA_5}{m^2-(S+n)},\ A_1=-(1+N_3+N_4)\ A_2=-(1-N_5-N_6-N_7-N_8-N_9-N_{10}),$$

$$A_3=-(N_{11}+N_{12}+N_{13}+N_{14}+N_{15}+N_{16}+N_{17}),\ A_4=-(1+N_{18}+N_{19}),$$

$$A_5=-(N_{20}+N_{21}+N_{22}+N_{23}+N_{24}+N_{25}+N_{26}+N_{27}+N_{28}),$$

$$A_6=-(N_{29}+N_{30}+N_{31}+N_{32}+N_{33}+N_{34}+N_{35}+N_{36}+N_{37}+N_{38}),$$

Nomenclature			
A	Real positive constant	T_∞	Dimensional free stream temperature (K)
B_0	Magnetic induction ($A.m^{-1}$)	q_r^*	Radiation heat flux density ($W.m^{-2}$)
C	Non dimensional Concentration	R_a	Thermal radiation parameter
C_p	Specific heat for constant pressure($J.kg^{-1}.K$)	G_m	Solutal Grashof number
D	Chemical molecular diffusivity ($m^2.S^{-1}$)	Gr	local temperature Grashof number
n	Mining	C_∞	Concentration in the fluid far away from the plate($kg.m^{-3}$)
k	Thermal conductivity$(W.m^{-1}.K^{-1})$	Sc	Schmidt number
g^*	acceleration due to gravity $(m.S^{-2})$	τ_w	Skin-friction coefficient
T_w	Fluid temperature at walls (K)	R^*	Radiation parameter
u	components of velocity vector in x direction	V_0	Scale of suction velocity $(m.S^{-1})$
K	Permeability of porous medium	U_0	Scale of free stream velocity
Kr	Chemical reaction parameter $(m.S^{-1})$	U_∞^*	Free stream velocity (K)
M	Magnetic parameter		Greek Symbols
T	Temperature of the fluid (K)	β	Spin gradient viscosity (K^{-1})
k_e^*	mean absorption coefficient	β^*	Coefficient of volumetric expansion $(m^3.kg^{-1})$

σ_s^*	Stefan-Boltzmann constant($Wm^{-2}K^{-4}$)	η	Heat generation parameter
u_p^*	Direction of fluid flow	μ	Fluid dynamic viscosity
N	Dimensionless material parameter	ρ	Density of the fluid($kg.m^{-3}$)
Ec	Eckert number	ϑ	Fluid kinematic viscosity($m^2.S^{-1}$)
N_u	Nusselt number	θ	Non dimensional temperature K
Pr	Prandtl number	ε	Scalar constant(<<1)
Q	Heat generation/absorption	σ	Electrical conductivity ($\Omega^{-1}m^{-1}$)
S_h	Sherwood number		Subscripts
T_*	Dimensional Temperature *(K)*	P	Plate
t^*	dimensional time *(S)*	∞	Free stream condition
e	electron charge*(C)*	W	Wall condition
v	Velocity component in y direction ($m.S^{-1}$)	*	Dimensionless properties