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$k_p$  dimensionless permeability parameter,  $D$  molecular diffusivity, ( $L^2T^{-1}$ ),  $k'_p$  permeability parameter ( $L^2$ ),  $\rho$  density of fluid, ( $ML^{-3}$ ),  $\nu$  Kinematic viscosity ( $L^2T^{-1}$ ),  $\sigma$  electrical conductivity ( $L^{-3}M^{-1}T^3I^2$ ),  $\lambda_1$  relaxation time parameter (T),  $\lambda_2$  retardation time parameter (T),  $\omega'$  frequency of oscillation, ( $T^{-1}$ ),  $\omega$  dimensionless frequency,  $\beta$  co-efficient of volume expansion due to heat ( $K^{-1}$ ),  $\beta^*$  co-efficient of volume expansion due to concentration,  $Mol^{-1}L^3$ ,  $\tau_{ij}$  viscous stress ( $ML^{-1}T^{-2}$ ),  $\eta_0$  dynamic viscosity ( $ML^{-1}T^{-1}$ ),  $U$  mean flow velocity ( $LT^{-1}$ ),  $g$  acceleration due to gravity ( $LT^{-2}$ ),  $Pe$  peclet number,  $\omega_e$  electron frequency ( $T^{-1}$ ),  $\tau_e$  electron collision time (T).