LIST OF SYMBOLS

e_{ij} = Components of strain tensor

$e = e_{ii}$ = Dilatation

σ_{ij} = Components of stress tensor

u_i = Components of displacement vector

u = Displacement along x-direction

v = Displacement along y-direction

$T,\ \theta$ = Temperature distributions

$T_0,\ \theta_0$ = Reference temperatures

F_i = Components of the body force vector

$\overrightarrow{q}$ = Heat flux vector

q_i = Components of heat flux vector

Q = Heat source

ρ = Mass density of the material

K = Thermal conductivity of the material

$K^\star$ = Rate of thermal conductivity of the material

c_e = Specific heat at constant strain

λ, μ = Lame's elastic constants

$\gamma = (3\lambda + 2\mu)\alpha_t$ is thermoelastic constant

α_t = Coefficient of linear thermal expansion

τ_q = Phase-lag of heat flux vector

τ_T = Phase-lag of temperature gradient

τ_v = Phase-lag of thermal displacement gradient

τ = Delay time parameter or thermal relaxation time parameter

δ_{ij} = Kronecker delta

$\delta(.)$ = Dirac delta function

$\vec{\nabla}$ = Gradient operator

$\nabla^2 = \triangle$ = Laplacian operator

$W =$ Wiener process

Throughout the thesis:

The sub-scripted comma notations are used to denote the partial derivatives with respect to the space variables. The over-headed dots denote partial derivatives with respect to time variable, t and the subscripts i, j, k take the values$1, 2, 3$. However, the summation is implied by index repetition.