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Devinder Singh Bittoo* (despathanai@yahoo.com), Department of Mathematics, Guru Nanak Dev Engg. College, Gill Road Ludhiana, Punjab India, Ludhiana, India. *Propagation of Waves in Homogeneous Isotropic Plates.*

In this paper the propagation of thermo elastic waves in homogeneous isotropic plate subjected to free and rigid insulated and isothermal conditions is investigated in the context of conventional coupled thermoelasticity, Lord Shulman, Green–Lindsay and Green-Nagadhi theories of thermoelasticity. Secular equations for the plate in the closed form and isolated mathematical conditions for symmetric and skew symmetric wave mode propagation in completely separate terms are derived. It is observed that the motion for SH modes get decoupled from rest of the motion and remains unaffected due to thermo-mechanical coupling and thermal relaxation effects. The results for coupled and uncoupled theories of thermo elasticity have been obtained as particular cases from the derived secular equations. At short wavelength limits the secular for symmetric and skew symmetric waves in stress free insulated and isothermal plate reduce to Rayleigh surface frequency equations. The results obtained have been verified numerically for aluminum-epoxy composite material and dispersion curve for symmetric and skew-symmetric wave modes are presented to illustrate and compare the theoretical result. (Received August 21, 2013)