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خلاصه مقاله:

In this paper the propagation of harmonic plane waves in a homogeneous anisotropic magneto-piezothermoelastic diffusive body with fractional order derivative is studied. The governing equations for a homogeneous transversely isotropic body in the context of the theory of thermoelasticity with diffusion given by Sherief et al. [1] are considered as a special case. It is found that three types of waves propagate in one dimension anisotropic magneto-piezothermoelastic diffusive body, namely quasi-longitudinal wave (QP), quasi-thermal wave (QT) and quasi-diffusion wave (QD). The different characteristics of waves like phase velocity, attenuation coefficient, specific heat loss and penetration depth are computed numerically and presented graphically for Cadmium Selenide (CdSe) material. The effect of fractional order parameter on phase velocity, attenuation coefficient, specific heat loss and penetration depth has been studied.

کلمات کلیدی:

Piezothermoelastic, Magneto, Harmonic plane wave, Phase velocity, Attenuation coefficient

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