عنوان مقاله:

Influence of Electromagnetic Generalized Thermoelasticity Interactions with Nonlocal Effects under Temperature-Dependent Properties in a Solid Cylinder

نویسندگان:

shaaban khader - *Mathematical and Theoretical Physics Department, Egyptian Atomic Energy Authority, EGYPT*

ayman marrouf - *Mathematical and Theoretical Physics Department, Egyptian Atomic Energy Authority, EGYPT*

mona khedr - *Physics Department, Alexandria University Faculty of Science, EGYPT*

خلاصه مقاله:

The temperature-dependent properties and the effect of non-local elasticity in the presence of a magnetic field have been studied in an infinitely long solid conductive circular cylinder. The issue arises in the setting of two relaxation times in extended magneto-thermoelasticity theory. In the presence of a uniform magnetic field in the direction of the axis, the lateral surface is traction-free and subjected to known temperatures. Techniques are employed to determine the answer in the Laplace transform domain. A numerical method based on Fourier series expansions is used to carry out the inversion operation. In addition, graphs depict comparisons to highlight the influence of various elements such as the difference in times and the effect of the non-local coefficient and Empirical material constant.

کلمات کلیدی:

Electromagnetic theory, Generalized thermoelasticity, Nonlocal thermoelasticity, Solid cylinder, Temperature-dependent properties

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/1643567