

## عنوان مقاله:

Assessment of Hydrostatic Stress and Thermo Piezoelectricity in a Laminated Multilayered Rotating Hollow Cylinder

## محل انتشار:

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## خلاصه مقاله:

In this paper, we built a mathematical model to study the influence of the initial stress on the propagation of waves in a hollow infinite multilayered composite cylinder. The elastic cylinder assumed to be made of inner and outer thermo piezoelectric layer bonded together with Linear Elastic Material with Voids (LEMV) layer. The model described by the equations of elasticity, the effect of the initial stress and the framework of linearized, three-dimensional theory of thermo elasticity. The displacement components obtained by founding the analytical solutions of the motion's equations. The frequency equations that include the interaction between the composite hollow cylinders are obtained by the perfect-slip boundary conditions using the Bessel function solutions. The numerical calculations carried out for the material PZT- $\delta$ A and the computed non-dimensional frequency against various parameters are plotted as the dispersion curve by comparing LEMV with Carbon Fiber Reinforced Polymer (CFRP). From the graph, it is clear that .those are analyzed in the presence of hydrostatic stress is compression and tension

## کلمات کلیدی:

Initial hydrostatic stress, Thermoelasticity, longitudinal waves, Bessel function

## لینک ثابت مقاله در پایگاه سیویلیکا:

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