

## عنوان مقاله:

Investigation on Stress Distribution of Functionally Graded Nanocomposite Cylinders Reinforced by Carbon Nanotubes in Thermal Environment

## محل انتشار:

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## خلاصه مقاله:

In this paper, stress and displacement fields of functionally graded (FG) nanocomposite cylinders reinforced by carbon nanotubes (CNTs) subjected to internal pressure and in thermal environment are investigated by finite element method. The nanocomposite cylinders are combinations of single-walled carbon nanotubes (SWCNTs) and isotropic matrix. Material properties are estimated by a micro mechanical model (Rule of mixture), using some effective parameters. In this simulation, an axisymmetric model is used; uniform and four kinds of linear functionally graded (FG) distributions of CNTs along the radial direction is assumed, in order to study the stress distributions. Effects of the kind of distribution and volume fraction of CNT and also, thermal environment, and geometry dimension of cylinder are investigated on the stress and displacement distributions of the FG nanocomposite cylinders. It is shown that, CNTs distribution and environment temperature are important factors on the stresses distribution of the nanocomposite cylinders.

## کلمات کلیدی:

Carbon nanotubes, Finite Element Method, Functionally graded, Nanocomposite cylinders, Stress distribution

## لینک ثابت مقاله در پایگاه سیویلیکا:

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