عنوان مقاله:

The influence of carbon nano-tube volume fraction on buckling load of piezoelectric cylindrical composite panelsreinforced with carbon nanotubes

محل انتشار:

کنفرانس بین المللی مهندسی معدن، فلزات و مواد (سال: ۱۳۹۴)

تعداد صفحات اصل مقاله: ۲۰

نویسندگان:

M Eskandari - Department of Mechanical Engineering, Kashan Branch, Islamic Azad University, Kashan, Iran

M Nasihatgozar - Department of Mechanical Engineering, Kashan Branch, Islamic Azad University, Kashan, Iran

V Daghigh - Young Researchers and Elite Club, Jasb Branch, Islamic Azad University, Delijan, Iran

خلاصه مقاله:

In the present research work, the effect of carbon nano-tube volume fraction in bucklingload of piezoelectric cylindrical composite panels reinforced with carbon nano-tubessubjected to axial load is investigated. Classical laminated plate theory (CLPT) isemployed to reach stress and displacement correlations embracing mechanical andmagnetic terms. Stress-strain equations for piezoelectric cylindrical panels reinforcedwith carbon nanotubes are then written by using Mori-Tanaka method. The results showthat increasing the volume fraction of nano-tube eventuates in increasing the bucklingload. In order to verify the solution approach, motivated by a recent research workpublished by Interna

کلمات کلیدی:

Buckling load, volume fraction of carbon nano-tube, piezoelectric cylindrical shell, Mori–Tanaka model