عنوان مقاله:

Wave propagation behaviors of porous nanocomposite shells reinforced with GPL

محل انتشار:

اولین کنگره ملی تازه یافته ها در مهندسی مکانیک و هوافضا (سال: 1397)

تعداد صفحات اصل مقاله: 15

نویسندگان:

Farzad Ebrahimi - *Department of Mechanical Engineering, Faculty of Engineering, Imam Khomeini International University, Qazvin, Iran*

Ali Seyfi - *School of Mechanical Engineering, College of Engineering, University of Tehran, Tehran, Iran*

ali Dabbagh

خلاصه مقاله:

Present research aims to study the wave propagation analysis of a graphene platelet reinforced (GPLR) nanocomposite shell considering porosity effect for the first time. The Halpin-Tsai model is used to estimate utilized materials in the porous nanocomposite. Pores are distributed in matrix symmetrically and asymmetrically in this analysis. The equations of the shell's motion are derived according to the Hamilton's principle coupled with the kinematic relations of the first-order shear deformation theory of the shells. Afterward, the obtained governing equations are solved analytically. The accuracy of the presented formulations is examined by comparing results of this method with those reported by former authors. The effect of different parameters on frequency of nanocomposite .shell are explored in a group of illustrations which can be observed in detail

کلمات کلیدی:

Wave propagation; porous nanocomposite; graphene platelet (GPL); first-order shear deformation shell theory