عنوان مقاله:

Nonlocal free vibration of viscoelastic nanoribbon resting on elastic medium

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خلاصه مقاله:

Graphene is a single layer material with one atom thickness that has high density and unique electrical, mechanical and thermal properties. Graphene nanoribbon is a graphene sheet with finite width that is used as components of nanodevices and sensors. In this paper, the non-local elasticity theory for free vibration analysis of a viscoelastic nanoribbon placed in the elastic medium is considered. Viscoelastic material model based on the Kelvin Voigt model is taken into account. In this study, the effect of various parameters such as the non-local coefficient, structural damping and stiffness coefficient of the elastic foundation on the natural frequencies of nanoribbon are investigated. The results of this research show that with an increase in the structural damping coefficient, the natural frequency decreases.

کلمات کلیدی:

Free vibration; Nonlocal elasticity theory; Viscoelastic nanoribbon graphene; Elastic medium

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