عنوان مقاله:

Effect of Carbon Nanotube Geometries on Mechanical Properties of Nanocomposite Via Nanoscale Representative Volume Element

نویسندگان:

F Moghaddam - *Department of Mechanical Engineering, Sharif University of Technology, Tehran*

E Ghavanloo - *School of Mechanical Engineering, Shiraz University*

S.A Fazelzadeh - *School of Mechanical Engineering, Shiraz University*

خلاصه مقاله:

Predicting the effective elastic properties of carbon nanotube-reinforced nanocomposites is of great interest to many structural designers and engineers for improving material and configuration design in recent years. In this paper, a finite element model of a CNT composite has been developed using the Representative volume element (RVE) to evaluate the effective material properties of nanocomposites. Based on this model, the effects of geometrical characteristics such as the aspect ratio, orientation and volume fraction of the CNTs in conjunction with the interphase behavior on the mechanical properties of the nanocomposites are elucidated and the elastic properties of a complex polymeric nanofibrous structure are determined.

کلمات کلیدی:

Carbon Nanotube, nanocomposite, Representative volume element, Geometrical characteristic

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