سیویلیکا - ناشر تخصصی مقالات کنفرانس ها و ژورنال ها
گواهی ثبت مقاله در سیویلیکا
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عنوان مقاله:

Analytical and numerical techniques to predict wavy carbon nanotubes properties

محل انتشار:

شانزدهمین کنفرانس سالانه بین المللی مهندسی مکانیک (سال: 1387)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

In order to increase our understanding of the mechanical behavior of nanotube reinforced polymers, it is useful to develop models of the effective properties of these materials, enabling detailed study of the material system. The basis of the current analytical model is to determine the effective reinforcing modulus (ERM) of the wavy embedded nanotube using Castligiano's theorem and continuum assumption. The results show that with increasing the waviness of NT, the normalized elastic modulus decreases. The present study not only provides the relationship between the effective properties and the morphology of carbon nanotubes, but also may be useful for improving and tailoring the mechanical properties of nanotube reinforced polymer composites (NTRPCs).

کلمات کلیدی:

Carbon Nanotubes- Waviness - Mechanical properties

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