

عنوان مقاله:

Mechanical properties of double-walled carbon nanotubes

محل انتشار:

هفتمین همایش انجمن هوافضای ایران (سال: 1386)

تعداد صفحات اصل مقاله: 6

نویسندگان:

K Yazdchi - *Mechanical Engineering Department, Amirkabir University of Technology, Tehran, Corresponding Author:*
MSc Student

M Salehi - *Mechanical Engineering Department, Amirkabir University of Technology, Tehran, Associate Professor*

M.M Shokrieh - *Mechanical Engineering Department, Iran University of Science and Technology, Tehran. Professor*

خلاصه مقاله:

In the past decade a large interest is developed to carbon nanotubes (CNTs) that exhibit exceptional mechanical and electrical properties. In this paper, the finite element model (FE) is combined with the modified Morse interatomic potential and the molecular structural mechanics approach in order to study the role of diameter and chirality in the mechanical properties of Armchair and Zigzag double-walled carbon nanotubes (DWCNTs). The interlayer van der Waals (vdW) forces are represented by the '6-12' Lennard-Jones (LJ) potential and simulated by a nonlinear truss rod model. The results show the Young's and shear modulus of DWCNTs increases with increasing the nanotube diameter. The computational results agree well with the previous experimental and theoretical results

کلمات کلیدی:

Mechanical properties- Finite Element Method- Double walled Carbon Nanotubes

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/55354>

