

## عنوان مقاله:

Load Transfer Efficiency in CNT/Epoxy: A Parametric Study on The Effect of CNT Length and Non-bonded Interphase

## محل انتشار:

سومین کنفرانس نانوساختارها (سال: 1388)

تعداد صفحات اصل مقاله: 3

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## خلاصه مقاله:

The load transferring issue from matrix to CNT is studied here using multi-scale finite element method. A 3-D finite element model of a unit cell consisting of capped carbon nanotubes, non-bonded inter-phase and surrounding polymer is built. The model is subjected to tensile load case and a parametric study is carried out to investigate the effect of CNT's length on reinforcement. It is observed that CNTs are smaller than 60 nm do not contribute in reinforcement. It is observed that efficient length of CNT for sufficient load transfer from matrix to CNT is at the order of microns. Furthermore, a comparison between results obtained for short carbon nanotubes and long carbon nanotube is presented. The efficient length of CNT in form of (10, 10) is obtained about 1700 microns while interphase region is treated using non-bonded van der Waals interactions.

## کلمات کلیدی:

Carbon Nanorube; Non-bonded Interphase; Load Transfer, Length, Multi-scale FEM

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/84877>

