

## Erratum: Mechanical properties of carbon nanotubes with vacancies and related defects [Phys. Rev. B 70, 245416 (2004)]

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(Received 14 February 2005; published 29 April 2005)

DOI: 10.1103/PhysRevB.71.169906

PACS number(s): 81.07.De, 61.80.Jh, 62.25.+g, 99.10.Cd

The exerted force in the simulations for the tensile strength was overestimated by a factor of two. Correcting this changes the tensile strength values in the last column of Table I and the force-strain curves of Fig. 1 in the publication. These are reproduced below. The final results (Fig. 4 in the publication) and conclusions are not affected because only relative strengths were considered.

During the printing process the subfigures in Fig. 2 were transposed. The new figure caption that is in accordance with the figure is given below.

We are grateful to Dr. Steven Mielke for pointing out the error in the force calculation.

TABLE I. Young's modulus, critical strain  $\epsilon$  and tensile strength  $\sigma$  of perfect nanotubes.  $Y_{s0}$  refers to surface based Young's modulus and  $Y_0$  to conventional Young's modulus [see Eqs. (2) and (3)]. The graphite interlayer distance  $t=3.35$  Å has been used as the thickness of a nanotube shell in computing  $Y_0$  and  $\sigma$ .

Tube	Diameter (Å)	$Y_{s0}$ (N/m)	$Y_0$ (GPa)	$\epsilon$	$\sigma$ (GPa)
(5,5)	6.78	230	690	0.260	120
(9,0)	7.05	220	669	0.22	110
(10,10)	13.56	240	700	0.27	120
(17,0)	13.31	230	690	0.21	110

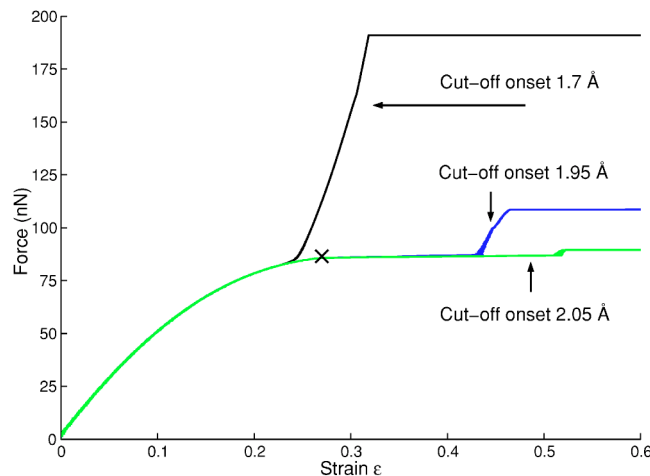


FIG. 1. (Color online) Force-strain curves for an ideal (5,5)-nanotube at 10 K temperature with three different cut-off radii. The onset of the cut-off function can be perceived as an artificial peak. The flat regime depicts a sudden bond elongation to a length corresponding to the cut-off. Thus the beginning of this plateau, “X,” corresponds to the largest value of force outside the cut-off peak and will be interpreted as bond rupture.

FIG. 2. Atomic networks of SWNTs with single (a)-(c), double (d)-(f) and triple (g)-(i) vacancies. Nonreconstructed configurations are shown in (a),(d) and (g) while all the others are reconstructed. Only the front wall of each tube is shown. The configurations on the right-hand-side column correspond to a (17,0) zig-zag SWNT, and the others to a (10,10) armchair SWNT.