

2/10, 61046; e-mail: avramov@nas.gov.ua

1. Gibson R. F., Ayorinde E. O., Wen Y.-F. Vibrations of carbon nanotubes and their composites: A review. *Composites Science and Technology*. 2007. 67. P. 1–28.
2. Sirtori C. Applied physics: bridge for the terahertz gap. *Nature*. 2002. 417. P. 132–133.
3. Jeon T., Kim K. Terahertz conductivity of anisotropic single walled carbon nanotube films. *Applied Physics Letters*. 2002. 80. P. 3403–3405.
4. Yoon J., Ru C. Q., Mioduchowski A. Sound wave propagation in multiwall carbon nanotubes. *Journal of Applied Physics*. 2003. 93. P. 4801–4806.
5. Iijima S., Brabec C., Maiti A., Bernholc J. Structural flexibility of carbon nanotubes. *Journal of Chemical Physics*. 1996. 104. P. 2089–2092.
6. Yakobson B. I., Campbell M. P., Brabec C. J., Bernholc J. High strain rate fracture and C-chain unraveling in carbon nanotubes. *Computer Material Science*. 1997. 8. P. 241–248.
7. Wang C. Y., Zhang L. C. An elastic shell model for characterizing single-walled carbon nanotubes. *Nanotechnology*. 2008. 19. 195704.
8. Wang Q., V. K. Varadan Application of nonlocal elastic shell theory in wave propagation analysis of carbon nanotubes. *Smart Material Structure*. 2007. 16. P. 178–190.
9. Fu Y. M., Hong J. W., Wang X. Q. Analysis of nonlinear vibration for embedded carbon nanotubes. *Journal of Sound and Vibration*. 2006. 296. P. 746–756.
10. Ansari R., Hemmatnezhad M. Nonlinear vibrations of embedded multi-walled carbon nanotubes using a variational approach. *Mathematical and Computer Modeling*. 2011. 53. P. 927–938.
11. Ansari R., Hemmatnezhad M. Nonlinear finite element analysis for vibrations of double-walled carbon nanotubes. *Nonlinear Dynamics*. 2012. 67. P.373–383.
12. Hajnayeb A., Khadem S. E. Analysis of nonlinear vibrations of double-walled carbon nanotubes conveying fluid. *Journal of Sound and Vibration*. 2012. 331. P. 2443–2456.
13.1.2015. 716 .
14. Amabili M. Nonlinear vibrations and stability of shells and plates. Cambridge: Cambridge University Press. 2008. 605 p.
15. Hu Y.-G., Liew K. M., Wang Q., He X. Q., Yakobson B. I. Nonlocal shell model for elastic wave propagation in single- and double-walled carbon nanotubes. *Journal of the Mechanics and Physics of Solids*. 2008. 56. P. 3475–3485.
16. Peddieson J., Buchanan G. R., McNitt R. P. Application of nonlocal continuum models to nanotechnology. *International Journal of Engineering Science*. 2003. 41. P. 305–312.

21.02.2018,
17.05.2018