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Clamped-free double-walled carbon nanotube-based mass sensor. (English) Zbl 1381.74102
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Summary: In this study, we investigate the vibrations of the cantilever double-walled carbon nanotube (DWCNT) with attached bacterium on the tip in the view of developing the sensor. This sensor will be able to help to identify the bacterium or virus that may be attached to the DWCNT. Four cases are considered; these are light or heavy bacteria attached to either inner or outer nanotube. The problem is solved by the finite difference method.

MSC:

74H45 Vibrations in dynamical problems in solid mechanics

74S20 Finite difference methods applied to problems in solid mechanics

Cited in **5** Documents

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