Effect of uniaxial strain on the current of (6,6) finite armchair carbon nanotube

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Abstract
In this paper, the uniaxial strain effect on the electronic properties of (6,6) finite armchair carbon nanotube was investigated by using the Green function technique and Landure-Buttiker formula. It was found that, in (6,6) finite carbon nanotube with $3q$ and $3q+1$ length, where $q$ is a certain integer, the current was induced by the application of a suitable tensile strain and compressive strain in low voltage, respectively. The current of (6,6) finite carbon nanotube with $3q-1$ length was decreased by loading the uniaxial strain. According to the results semiconductor-metal transition in (6,6) finite carbon nanotube and vice versa is observed by applying uniaxial strain.

Keywords: finite carbon nanotube, Green function, current, uniaxial strain

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