

# Accepted Manuscript

First principles study of electronic structure and carrier mobility in  $\beta$ -armchair antimony nanotubes

Shilpa Singh, Sanjeev K. Gupta, Yogesh Sonvane, P.N. Gajjar

PII: S0375-9601(18)30728-X  
DOI: <https://doi.org/10.1016/j.physleta.2018.07.005>  
Reference: PLA 25207

To appear in: *Physics Letters A*

Received date: 15 April 2018  
Revised date: 16 June 2018  
Accepted date: 3 July 2018

Please cite this article in press as: S. Singh et al., First principles study of electronic structure and carrier mobility in  $\beta$ -armchair antimony nanotubes, *Phys. Lett. A* (2018), <https://doi.org/10.1016/j.physleta.2018.07.005>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## Highlights

- We have studied the stability and structure of antimony nanotubes.
- We observed that on increasing diameter of nanotubes, strain energy decreases.
- SbNT of higher diameter (diameter above 11.42 Å) shows quantum confinement effect.
- Poisson's ratio for (7, 7) nanotubes is very less in magnitude therefore, it is less flexible than other nanotubes.
- Electron mobility for these nanotubes varies between 100–6000 cm<sup>2</sup>/Vs.

Download English Version:

<https://daneshyari.com/en/article/8948990>

Download Persian Version:

<https://daneshyari.com/article/8948990>

[Daneshyari.com](https://daneshyari.com)