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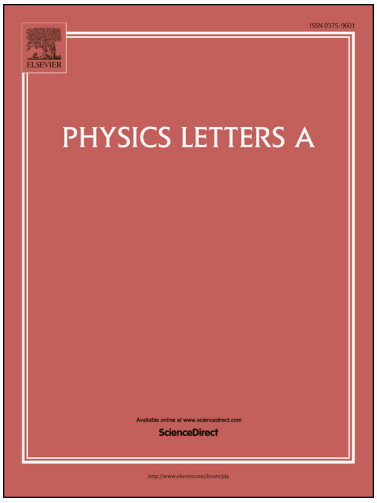

First principles study of electronic structure and carrier mobility in β-armchair antimony nanotubes

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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^2/Vs.