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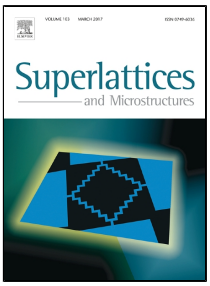


Composition manipulation of near infrared $InAs_xSb_{1-x}$ nanocrystals: Atomistic tight-binding theory

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**Highlights**

- Structural and optical properties of near infrared $InAs_xSb_{1-x}$ nanocrystals are manipulated by compositions.
- With the increasing As compositions, the improvement of optical band gaps is realized.
- The As compositions tune the optical band gaps into a broad range of the near infrared spectrum.
- Good agreement is achieved between the tight-binding and the experimental data.
- The reduction of the optical property is gained with the increasing As compositions.