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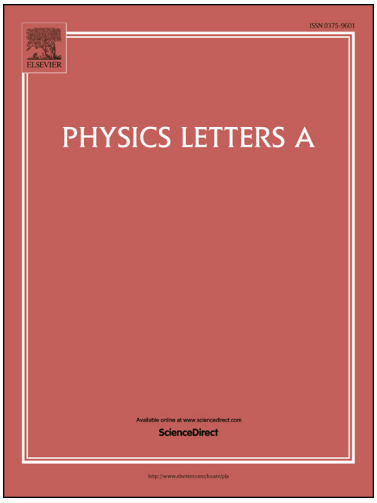

Confined state energies in AGNR semiconductor-semiconductor heterostructure

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Highlights

- A graphene structure called semiconductor-semiconductor heterostructure (SSH) is proposed, which is combined with 3m and 3m+1 families AGNRs.
- Simulation results reveal that energy gap of SSH structure is continuously and analytically tunable with the increase of N1/N.
- SSH's tunable energy gap can be attributed to the quantum well localization effect which is induced by the combination of SSH's two different families AGNRs.