

عنوان مقاله:

Investigating the quantum current of TGNRs in degenerate regime

محل انتشار:

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خلاصه مقاله:

Graphene is determined by a wonderful carrier transport property and high sensitivity at the surface of a single molecule, making them great as resources used in Nano electronic use. TGN is modeled in form of three honeycomb lattices with pairs of in-equivalent sites as {A1, B1}, {A2, B2}, and {A3, B3} which are located in the top, center and bottom layers, respectively. trilayer graphene has two types of stable configurations, ABA and ABC stacking orders. In both types, the first two layers are Bernal-stacked, where one sub lattice of the middle layer is located above the center of the hexagons of the bottom layer. The TGN is shown to have different electronic properties which are strongly dependent on the interlayer stacking sequence [48]. ABA-stacked TGN with width and thickness less than De-Broglie wave length can be assumed as a one dimensional material. The present research models transmission coefficient of the Schotcky structure in the graphene-based transistor based on semiconducting channel width and then analysis its quantum properties given dependence on structural parameter. At the same time, the quantum current is presented based on the transmission coefficient for the trilayer graphene

کلمات کلیدی:

Trilayer graphene, transistor, transmission coefficient, quantum current, degenerate and nondegenerate regime

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