

عنوان مقاله:

The Mathematical Model of Transmission Coefficient with a Quantum Dot in Nano-transistors

محل انتشار:

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خلاصه مقاله:

Carbon quantum dots (CQDs) serve as a new class of 'zero dimensional' nanomaterials in the carbon class with sizes below 10 nm. As light emitting nanocrystals, QDs are assembled from semiconductor materials, from the elements in the periodic groups of II-VI, III-V or IV-VI, mainly thanks to impacts of quantum confinement QDs have unique optical properties such as brighter, highly photo and chemical stable, with broad absorption, narrow and symmetric emission spectrum. A substantial QDs feature is that their emission wavelength can be fine-tuned by adjusting their size and chemical composition. Nowadays carbon nanoparticles are applied on the island of single electron transistor and Nano-transistors, and fluorine because of its sustainability is one of the best materials inter alia. The basis of Single electron devices (SEDs) is controllable single electron transfer between small conducting islands. In this paper transmission coefficient as a main transport factor need to be explored in this work the transmission coefficient and reflection coefficient for a potential barrier is investigated. All theoretical expressions such as height, width of potential barriers, distance between them and carrier property are included to have exact value of transmission coefficient.

کلمات کلیدی:

Transmission Coefficient, Single Electron Transistor, Quantum Dots, Fullerene

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