

GEOMETRY EFFECT ON GRAPHENE NANORIBBON BASED TRANSISTOR

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ABSTRACT

Graphene has incredible carrier transport property with high application opportunity at single molecule level, which composes it as promising materials on Nano electronic application. In order to develop the new device such as graphene nanoribbon transistor, Carbon Nanotube Field Effect Transistor (CNTFET) and Nanowire based devices, it is essential to investigate the quantum limit in low dimensional systems. In this paper transmission coefficient of the schottcky structure in the graphene based transistor based on the width of semiconducting channel is modeled additionally its quantum properties due to the structural parameters are analyzed. Also one dimensional quantum current in the presence of the wave vector approximation for monolayer graphene nanoribbon (MGNR) is presented.

KEYWORDS: Quantum Current, Degenerate and Nondegenerate Approximation, Graphene Nanoribbons, Transmission Coefficient