

ABSTRACT:

Bilayer Graphene Nanoribbon (BGN) Carrier statistic in the non-degenerate and the degenerate limit is presented. Two dimensional BGN through AB configuration with width less than De-Broglie wave length can be understood as a one dimensional (1D) device. Based on the 1D behavior offered model illustrates exponential function of normalized Fermi energy which explains carrier concentration on low carrier regime. However on zero to $3kBT$ distance from and within conduction or valence bands high concentration of carriers sensitively depends on normalized Fermi energy which is independent of temperature as well. Since a BGN field effect transistor (BGNFET) can be shaped by using graphene bilayers with an external controllable voltage which is perpendicular to the layers in gates.