

Evaluation of Graphene FET Model in Quasi-Ballistic Regime for Frequency Doubler

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This paper, present a radio frequency (RF) performance benchmarking for circuit design using the quasi-ballistic transport approached graphene FET (GFET) device as reported in earlier literature. Main objective of this work is to test and validate the proposed model for RF circuit application. For this, a set of expression of GFET device in Verilog-A using circuit simulator like Cadence Virtuoso has been done on a GFET based frequency doubler circuits, which also include the advantage of the ambipolar conduction of graphene material to explain the quasi-ballistic transport properly in graphene channel. Since Best available approached model, device and algorithms of graphene based Field effect transistor is fevering only Radio frequency and circuit design applications, so RF performance analysis is of paramount need for this modern era electronic which is now reached to atomic level.