

Channel Length Modulation Effect on Monolayer Graphene Nanoribbon Field Effect Transistor

Authors : Mehdi Saeidmanesh, Razali Ismail

Abstract : Recently, Graphene Nanoribbon Field Effect Transistors (GNR FETs) attract a great deal of attention due to their better performance in comparison with conventional devices. In this paper, channel length Modulation (CLM) effect on the electrical characteristics of GNR FETs is analytically studied and modeled. To this end, the special distribution of the electric potential along the channel and current-voltage characteristic of the device is modeled. The obtained results of analytical model are compared to the experimental data of published works. As a result, it is observable that considering the effect of CLM, the current-voltage response of GNR FET is more realistic.

Keywords : graphene nanoribbon, field effect transistors, short channel effects, channel length modulation

Conference Title : ICNB 2016 : International Conference on Nanotechnology and Biotechnology

Conference Location : Miami, United States

Conference Dates : March 24-25, 2016