

# **Simulation of semiconductor nanowire field-effect transistors based on a ballistic model taking into account the effect of reducing the diameter of the nanowire electron effective mass**

Hamideh Abdollah Poor\*, Seyed Ali Sedigh Ziabari,

**Abstract:** In this study, we propose a new model to simulate NWFET, The procedure based on ballistic and software based FETTOY. The nanowires for less than 3 nm in diameter, the diameter reduction, the effective mass changes. In this study the idea in order to improve the simulation of ballistic field effect transistor semiconductor nanowires are used. The ballistic transistor simulation model in FETTOY done, But the influence of the diameter of the electron effective mass in this application is not considered, For software FETTOY for diameter greater than 3 nm defined. We calculate the effective electron mass for less than 3 nm in diameter and put in the simulator, software for diameters less than 3 nm defined. After the simulation, the output result compares with previous outputs common to observe and analyze changes.

**Keywords :** Qatar - crime

[Islamic Azad University, Rasht Branch - Thesis Database](#)  
[دانشگاه آزاد اسلامی، واحد رشت - سامانه بانک اطلاعات پایان نامه ها](#)