

"Nanotechnology and nanomaterials"

Influence of physical parameters on the depletion layer of channel for the component submicron

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Abstract.

In this work, we determine the influence of physical and geometrical parameters on the physical properties on the depletion layer of channel for the component submicron. This will include the following:

- We present the Green function in the two-dimensional case by an analytical model that combines the description of physical phenomena. The calculation is based on the two-dimensional resolution of the Poisson equation by an integral method. This allows a rigorous calculation of the quasi-static capacity of the space charge zone. [1]
- Solving the equation of two-dimensional Poisson is done in a conventional manner by the finite difference method. In general in the literature, among others, the limit of the depopulated zone created by the reverse bias Schottky contact, is calculated using the assumption of Schottky dimensional, this approximation is valid for the line width of very large relative to the depth of the depopulated area. Otherwise, a two-dimensional calculation is necessary because the side effects can not be neglected. [2]

The two-dimensional resolution of the equation of Poisson shows the distribution of loads on the grid as well as the two-dimensional profile of the depletion layer. [3]

Keywords: Depletion layer, two-dimensional approximation.

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