

SIMULATION OF THE ELECTRICAL CHARACTERISTICS OF DOUBLE GATE FINFET WITH THE VARIATION OF CHANNEL MATERIALS

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ABSTRACT

In this research work, the electrical characteristics of the double gate FinFET have been simulated for different channel materials. Three materials, Silicon (Si), Germanium (Ge) and Silicon-Germanium (SiGe) has been considered for simulating the drain current VS gate voltage of the FinFET. The characteristics of the threshold voltage of FinFET have also been studied for these three channel materials. The channel length has been considered 50nm. After analyzing the simulations, it has been proposed the smooth increase of drain current with the gate voltage for different values of drain voltage and the less decrease of the threshold voltage for higher drain voltage can be achieved for Silicon-Germanium (SiGe) channel of the FinFET.

KEYWORDS: *Silicon, Germanium, Channel, Material, Threshold, Gate*

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