

## **2D Device Modeling and Simulation / FET for Biomedical Applications**

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### **Abstract :**

The aim of our work is to model physically the material of the biosensor-type FET (Field Effect Transistor) using drift diffusion model. This latter is given in the form of differential equations with partial derivatives, describing the physical behavior of charges and currents in each part of the device. Then we exploit our modeling results such as: the electronic properties of a FET (Field Effect Transistor)-based silicon, distribution of electronic potential, the current density and the concentration of electrons and holes.

**Keywords :** Modeling; Simulation; FET; Silicon; Drift Diffusion.

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