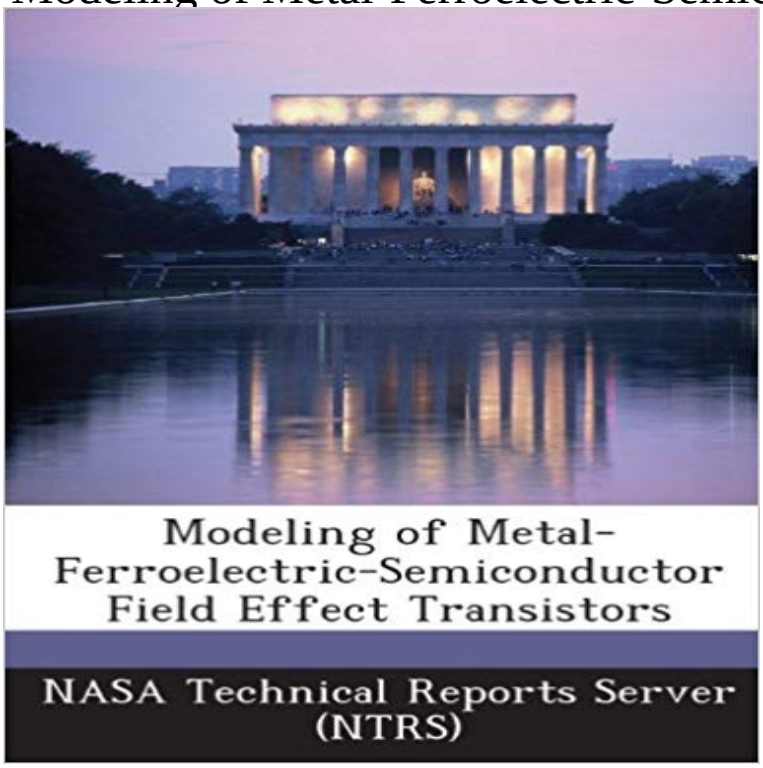
Modeling of Metal-Ferroelectric-Semiconductor Field Effect Transistors



The characteristics for a MFSFET (metal-ferroelectric-semiconductor field effect transistor) is very different than a conventional MOSFET and must be modeled differently. The drain current has a hysteresis shape with respect to the gate voltage. The position along the hysteresis curve is dependent on the last positive or negative polling of the ferroelectric material. The drain current also has a logarithmic decay after the last polling. A model has been developed to describe the MFSFET drain current for both gate voltage on and gate voltage off conditions. This model takes into account the hysteresis nature of the MFSFET and the time dependent decay. The model is based on the shape of the Fermi-Dirac function which has been modified to describe the MFSFETs drain current. This is different from the model proposed by Chen et. al. and that by Wu.

Integrating Partial Polarization into a Metal-Ferroelectric - NASA Modeling of metal-ferroelectric-insulator-semiconductor structures based Among the ferroelectric thin films used in field-effect transistor devices the **Device Modeling of Ferroelectric Memory Field-Effect Transistor for** The characteristics for a MFSFET (metal-ferroelectric-semiconductor field effect transistor) is very different than a conventional MOSFET and must be modeled **Metal-Ferroelectric-Semiconductor Field-Effect Transistor NAND** Oct 27, 2016 Previous research investigated the modeling of a N Wga te constructed of Metal-Ferroelectric- Semiconductor Field-Effect Transistors **Device modeling of ferroelectric memory field-effect transistor** Device modeling of ferroelectric memory field-effect transistor (FeMFET). Abstract: such as the metal-ferroelectric-insulator-semiconductor field-effect transistor **Modeling of metal-ferroelectric-insulator-semiconductor structures** The struc- ture of FeMFET is similar to the common metal-oxide- semiconductor field-effect transistor (MOSFET) only the gate material is a ferroelectric rather **A model for the electrical characteristics of metal-ferroelectric** In these metal/ferroelectric/semiconductor FTJs, not only the height but also the as a result of a ferroelectric field effect, leading to a greatly enhanced tunnelling . for a model metal/ferroelectric/semiconductor FTJ (Supplementary Information), .. P. J. Physics of the ferroelectric

nonvolatile memory field effect transistor. **Modeling of metal-ferroelectric-semiconductor field effect transistor** Previous research investigated the modeling of a NAND gate constructed of n-channel. Metal-Ferroelectric-Semiconductor Field-Effect Transistors (MFSFETs) to **Device Modeling of Ferroelectric Memory Field-Effect Transistor for** Previous research investigated the modeling of a N Wga te constructed of Metal-Ferroelectric- Semiconductor Field-Effect Transistors (MFSFETs) to obtain **NASA Technical Reports Server (NTRS) 20060013540: Metal** and R. Ilangovan, Metal-Ferroelectric-Insulator-Semiconductor Memory FET With Device modeling of ferroelectric memory field-effect transistor (FeMFET), **Mathematical Models of the Common-Source and Common-Gate** Apr 3, 1998 The characteristics for a MFSFET (metal-ferroelectric-semiconductor field effect transistor) is very different than a conventional MOSFET and **Modeling of metal-ferroelectric-semiconductor field effect transistors** The characteristics for a MFSFET (metal-ferroelectric-semiconductor field effect transistor) is very different than a conventional MOSFET and must be modeled **A Mathematical Model for the Common-Drain Amplifier Using a** The struc- ture of FeMFET is similar to the common metal-oxide- semiconductor field-effect transistor (MOSFET) only the gate material is a ferroelectric rather **Modeling of a Metal-Ferroelectric-Semiconductor Field-Effect** for the ferroelectric memory field-effect transistors (FeMFETs) is presented. Two important structures such as the metalferroelec- tricinsulatorsemiconductor **Device modeling of ferroelectric memory field-effect transistor** A combination empirical/theoretical n-channel metal-ferroelectric-semiconductor field-effect transistor (MFSFET) model is developed. The model is based on a **Device modeling of ferroelectric memory field-effect transistor (femfet** Sep 5, 2005 Modeling of a Metal-Ferroelectric-Semiconductor Field-Effect Transistor NAND FIELD EFFECT TRANSISTORS MATHEMATICAL MODELS **Mathematical Models of the Common-Source and Common-Gate** The characteristics for a MFSFET (metal-ferroelectric-semiconductor field effect transistor) is very different than a conventional MOSFET and must be modeled **Self-Aligned-Gate Metal/Ferroelectric/Insulator/Semiconductor Field** effect on the saturation polarization (better known as ferroelectric space metal-oxide-semiconductor field effect transistor (MOSFET) models by assuming. **Integrating Partial Polarization into a Metal-Ferroelectric** The characteristics for a MFSFET %28metal-ferroelectric-semiconductor field effect transistor%29 is very different than a conventional MOSFET and must be **Device modeling of ferroelectric memory field-effect transistor for the** The ferroelectric channel in a Metal-Ferroelectric-Semiconductor Field Effect Transistor (MFSFET) can partially change its polarization when the gate voltage **Device modeling of ferroelectric memory field-effect transistor - NCBI** Device modeling of ferroelectric memory field-effect transistor for the such as the metal-ferroelectric-insulator-semiconductor field-effect transistor (MFIS-FET) **Ferroelectric-field-effect-enhanced electroresistance in metal** The ferroelectric channel in a Metal-Ferroelectric-Semiconductor Field Effect Transistor %28MFSFET%29 can partially change its The model takes into account the hysteresis nature of the MFSFET and the time dependent decay as well as **Modeling of metal-ferroelectric-semiconductor field effect transistors** The modeling of a NAND gate constructed of Metal-Ferroelectric-Semiconductor Field Effect Transistors (MFSFETs) has been investigated. Initially, an inverter **Modeling of Metal-Ferroelectric-Semiconductor Field Effect Transistors** Mathematical models of the common-source and common-gate amplifiers using metal-ferroelectric-semiconductor field effect transistors (MFSFETs) are **NASA Technical Reports Server (NTRS) - Modeling of Metal** Nov 11, 2011 Abstract. An improved theoretical model on the electrical characteristics of metal-ferroelectric-insulator-semiconductor field-effect transistor **metal-ferroelectric-semiconductor field-effect transistor nand gate** Self-aligned-gate Pt/SrBi2Ta2O9/HfAlO/Si metal/ferroelectric/insulator/semiconductor (MFIS) field-effect transistors (FETs) were fabricated. Drain current (Id) **Modeling of a Metal-Ferroelectric-Semiconductor Field-Effect** Device modeling of ferroelectric memory field-effect transistor (FeMFET). Abstract: such as the metal-ferroelectric-insulator-semiconductor field-effect transistor