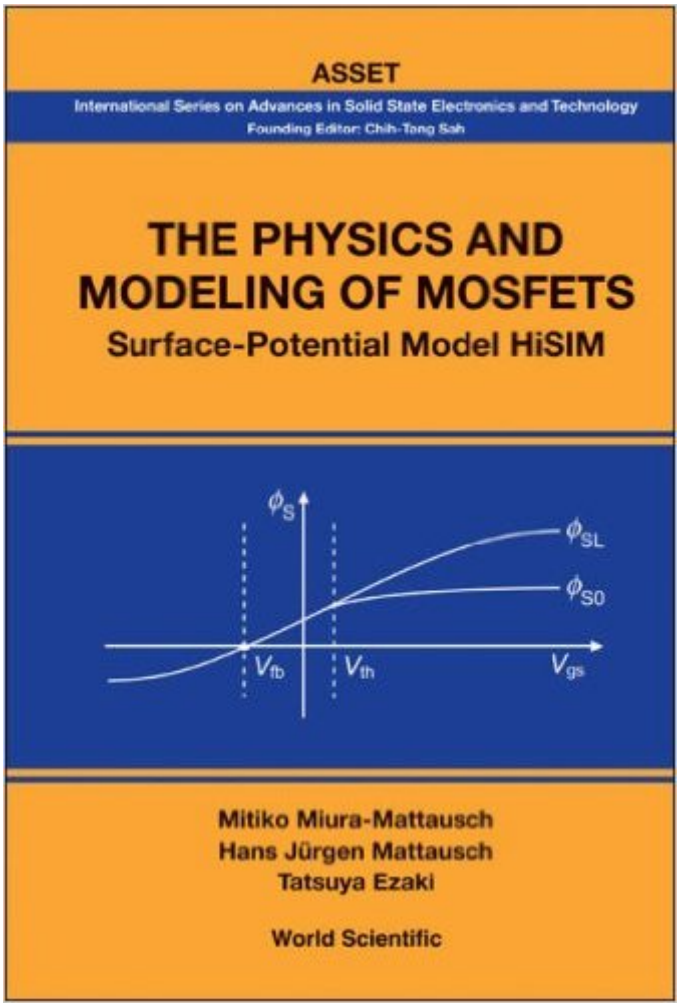
The Physics And Modeling Of Mosfets (International Series On Advances In Solid State Electronics) (International Series On Advances In Solid State Electronics And Technology (Unnumbered))

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Synopsis

This volume provides a timely description of the latest compact MOS transistor models for circuit simulation. The first generation BSIM3 and BSIM4 models that have dominated circuit simulation in the last decade are no longer capable of characterizing all the important features of modern sub-100nm MOS transistors. This book discusses the second generation MOS transistor models that are now in urgent demand and being brought into the initial phase of manufacturing applications. It considers how the models are to include the complete drift-diffusion theory using the surface potential variable in the MOS transistor channel in order to give one characterization equation. Contents: Semiconductor Device Physics Basic Compact Surface-Potential Model of the MOSFET Advanced MOSFET Phenomena Modeling Capacitances Leakage Currents and Junction Diode Modeling of Phenomena Important for RF Applications Summary of HiSIM s Model Equations, Parameters, and Parameter-Extraction Method.

Book Information

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