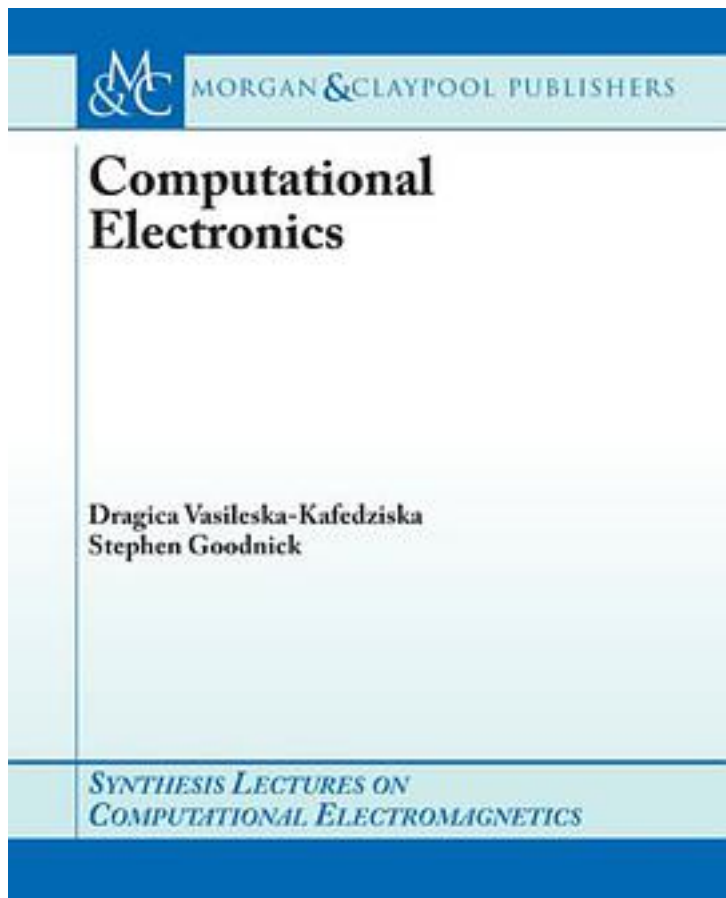


Computational Electronics (Synthesis Lectures on Computational Electromagnetics)



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Computational Electronics is devoted to state of the art numerical techniques and physical models used in the simulation of semiconductor devices from a semi-classical

perspective. Computational electronics, as a part of the general Technology Computer Aided Design (TCAD) field, has become increasingly important as the cost of semiconductor manufacturing has grown exponentially, with a concurrent need to reduce the time from design to manufacture. The motivation for this volume is the need within the modeling and simulation community for a comprehensive text which spans basic drift-diffusion modeling, through energy balance and hydrodynamic models, and finally particle based simulation. One unique feature of this book is a specific focus on numerical examples, particularly the use of commercially available software in the TCAD community. The concept for this book originated from a first year graduate course on computational electronics, taught now for several years, in the Electrical Engineering Department at Arizona State University. Numerous exercises and projects were derived from this course and have been included. The prerequisite knowledge is a fundamental understanding of basic semiconductor physics, the physical models for various device technologies such as pndiodes, bipolar junction transistors, and field effect transistors.

作者介绍:

目录:

[Computational Electronics \(Synthesis Lectures on Computational Electromagnetics\) 下载链接1](#)

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