DESCRIPTION

Practicing designers, students, and educators in the semiconductor field face an ever expanding portfolio of MOSFET models. In *Compact MOSFET Models for VLSI Design*, A.B. Bhattacharyya presents a unified perspective on the topic, allowing the practitioner to view and interpret device phenomena concurrently using different modeling strategies. Readers will learn to link device physics with model parameters, helping to close the gap between device understanding and its use for optimal circuit performance. Bhattacharyya also lays bare the core physical concepts that will drive the future of VLSI development, allowing readers to stay ahead of the curve, despite the relentless evolution of new models.

- Adopts a unified approach to guide students through the confusing array of MOSFET models
- Links MOS physics to device models to prepare practitioners for real-world design activities
- Helps fabless designers bridge the gap with off-site foundries
- Features rich coverage of:
  - quantum mechanical related phenomena
  - Si-Ge strained-Silicon substrate
  - non-classical structures such as Double Gate MOSFETs
- Presents topics that will prepare readers for long-term developments in the field
- Includes solutions in every chapter
- Can be tailored for use among students and professionals of many levels
- Comes with MATLAB code downloads for independent practice and advanced study

This book is essential for students specializing in VLSI Design and indispensable for design professionals in the microelectronics and VLSI industries. Written to serve a number of experience levels, it can be used either as a course textbook or practitioner’s reference.

Access the MATLAB code, solution manual, and lecture materials at the companion website: [www.wiley.com/go/bhattacharyya](http://www.wiley.com/go/bhattacharyya)

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### ABOUT THE AUTHOR

**A. B. Bhattacharyya** is an Emeritus Professor at Jaypee Institute of Information Technology and has been involved in research in the area of microelectronics technology, device modeling and CMOS analog design for about 40 years. His current research interest are nanoscale CMOS Design and VLSI interconnect modeling. He has taught in VLSI subject areas for over 30 years, supervising over 30 Phd students. He was formerly a Professor at the Centre for Applied Research in Electronics, Indian Institute of Technology, Delhi, where he was also Dean of Industrial Research Development and Coordinator of the university's microelectronics program for 25 years. Bhattacharyya has published 150 papers in major journals and 40 conference papers, and has conducted tutorials at IEEE VLSI conferences. He is a Fellow at the Indian National Academy of Sciences, a Founder Fellow of the Indian National Academy of Engineering, and a Fellow at the Institute of Electronics and Telecommunication Engineering (India). National awards include Vikram Sarabhai, Vasvik, Khosla and S.N.Mitra Memorial Awards. Visiting assignments include University of Southampton, University of Rochester, University of California, Los Angeles, University of Twente, (Netherlands), University Pierre and Marie Curie (Paris), and the Moscow Power Institute.

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