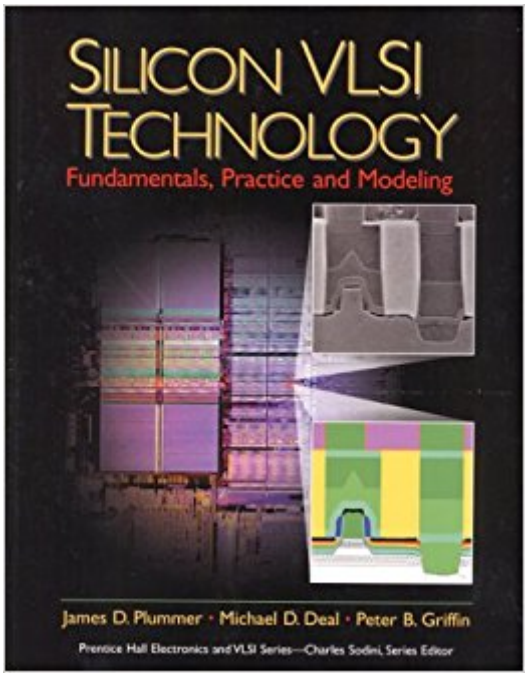
Silicon VLSI Technology: Fundamentals, Practice, And Modeling



Synopsis

Unique in approach, this book provides an integrated view of silicon technology--with an emphasis on modern computer simulation. It describes not only the manufacturing practice associated with the technologies used in silicon chip fabrication, but also the underlying scientific basis for those technologies. Modern CMOS Technology. Crystal Growth, Wafer Fabrication and Basic Properties of Silicon Wafers. Semiconductor Manufacturing--Clean Rooms, Wafer Cleaning and Gettering. Lithography. Thermal Oxidation and the Si/SiO2 Interface. Dopant Diffusion. Ion Implantation. Thin Film Diffusion. Etching. Backend Technology. For anyone interested in Fabrication Processes.

Book Information

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Customer Reviews

Before this book was published, Wolf & Tauber’s book was the only good reference I had. Plummer’s new book has a thorough review of basic principles, very well updated parts on current manufacturing equipments (Wolf’s book also has extensive coverage in this respect). The best part in my opinion is oxidation & diffusion parts where the authors are one of the leaders in current research. The book not only focuses on the specific details, but also gives an integrated view of the whole CMOS fabrication process, which I enjoyed a lot. I strongly recommend this book for students who want to learn basics of IC fabrication and also professional engineers who needs a good and well updated reference.

The best part of this book is that it covers modern fabrication technology. I expecially liked the

approach of introducing the complete CMOS fabrication flow in the beginning. It puts a context to following chapters. It is what I call system level approach for slicon fabrication. There is also emphasis on measurement and simulutions that are missing from traditional books. Both these are essential to modern technology. Also, I was very happy to see details on manufacturing choices - e.g. LOCOS vs STI. Explanations are clear.This is a text book, therefore at times may seem too dense, but definitely worth it if you are a process engineer.

If you are a process engineer, or want to become one, this book is a must have. Like other reviewers said, chapter 2 lays a context for the chapter ahead. From being a zero in basics, I went to become a person who could answer questions regarding fundamentals with ease and comfort, and build on those basics easily. All of that credit certainly goes to the way Mr. Plummer laid-out his textbook. Simple explanations of complex fundamentals, supported with pictures, flow-diagrams and drawings make this book not only interesting to read, but also an essential reference.I would definitely recommend this book if you want to learn or strengthen your IC fabrication fundamentals! Happy reading!

if your an electrical / process engineer, this is one of the must have books.

As a graduate student in electrical engineering, this is the best text book I have ever read. I had to read every chapter in this book last semester and I was impressed with how well written this book is. The concepts are explained using fundamental models without getting lost in the math. This book was a leisure to read and I would recommend it to anyone who wants to be able to explain how integrated circuits are made. This book also have a lot of useful charts, tables and formulas for reference!

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