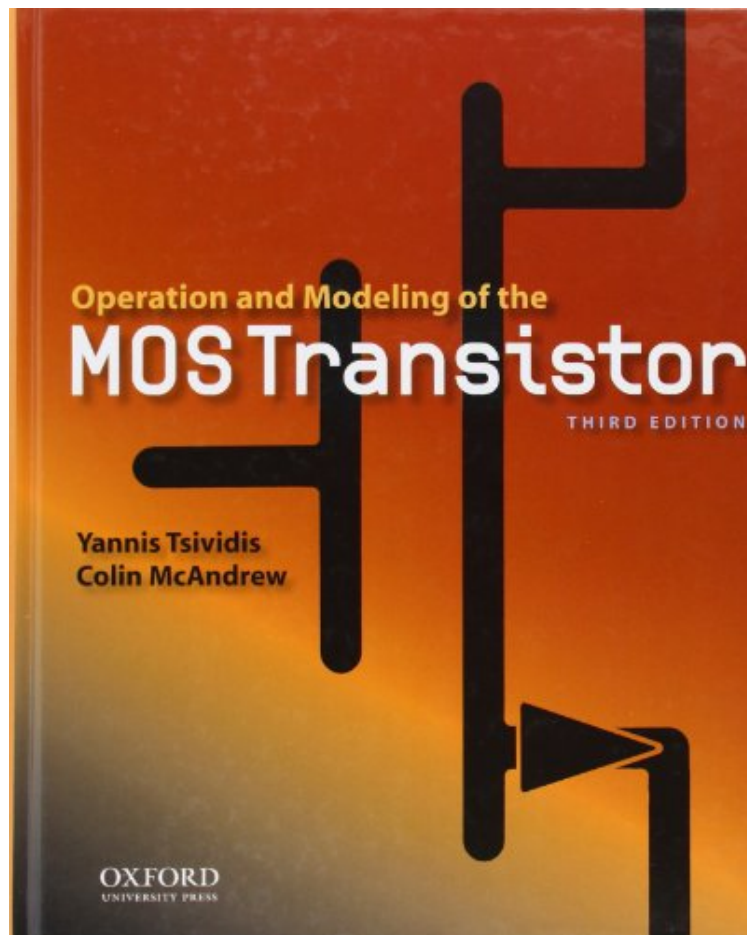


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Operation and Modeling of the MOS Transistor (The Oxford Series in Electrical and Computer Engineering)

Yannis Tsividis, Colin McAndrew
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Yannis Tsividis, Colin McAndrew : Operation and Modeling of the MOS Transistor (The Oxford Series in Electrical and Computer Engineering) before purchasing it in order to gage whether or not it would be worth my time, and all praised Operation and Modeling of the MOS Transistor (The Oxford Series in Electrical and Computer Engineering):

11 of 11 people found the following review helpful. An awesome electrical/electronics engineering textbookBy Dongho LeeThis review is for the third-edition (ISBN 978-0-19-517015-3) of this book. All other reviews by others prior to this review are for the second-edition (ISBN 0-19-517014-8). However, all other reviews are still applicable to the third-edition.As other reviewers already pointed out, this is a great electrical/electronics engineering textbook. The third-edition has been extensively revised and 700-page long while the second-edition is 600-page long. I have

absolutely no doubt in my mind that people who enjoyed the second-edition will also enjoy the third-edition even more and will feel that the contents of the book are up-to-date. The mathematical requirements to understand this book are introductory differential and integral calculus. And one must be willing to sit down with a pencil and paper to derive many equations in the book. Furthermore, one must have ready access to computer with mathematical software such as MATLAB with Optimization Toolbox installed. I found myself using MATLAB commands such as "fsolve" a lot to plot the graphs that I see on the book. This book covers only Si (silicon) bulk MOS transistors and does not cover the following MOS topics: SOI transistors, GaAs/InP transistors, RF modeling. In my opinion, the authors intended to write a textbook, not an encyclopedia. And it becomes very clear why some topics are left out of the book as one reads through the book. The books/papers covering missing topics are listed in Bibliography section at the end of each chapter. The authors never use a term such as "It is easy to see..." and skip explanations of certain topics in the book. If a topic needs to be explained, the authors went great lengths to explain the topic. The authors are also strict about using symbols, especially Greek symbols. A symbol has the same meaning throughout the entire book. This consistent symbol usage itself is not an easy feat to achieve because I have seen in many other books that one symbol means one thing in one chapter but means completely something else in another chapter. Finally, the authors indicate in the book that additional material and errata will be posted on the following Web site. [...] 0 of 0 people found the following review helpful. The content is great, but the quality of the printed book is alarmingly low! By Ssound This book covers every little nuance about the MOS transistor, I haven't seen any other book as comprehensive as this one focusing solely on the MOS transistor, a course on semiconductor physics is a pre-requisite, I recommend reading Sedra/Smith book first as an introduction to the subject. The book is written from a physics perspective rather than an engineering perspective, meaning that this is not the book you want if you are looking for applications or useful circuits. What I really disliked about the book is the construction of the book, some pages of my book are completely screwed up, for example: one of the pages is composed of 2 sheets of paper pasted on top of each other, the first half of the page is one piece of paper and at the middle of the page pasted on top of the first piece of paper there's a second piece of paper which makes up the second half of the page, weird stuff like that happens all over the book. The binding is horrible, the page block completely unglued from the spine of the book, and I had to re-glue it by myself, otherwise the pages would start falling off. I've experienced this trend of poor quality hardcover books many times, when someone buys a hardcover book he/she expects to keep that book for a long time, yet it seems that today hardcover books are completely disposable, editorials unethically take advantage by using cheap binders and materials whilst overpricing their books. The cheap international edition of this book being sold in developed countries seems to have better quality than the hardcover US edition!, yet it costs merely a fraction of the hardcover edition's price. 1 of 1 people found the following review helpful. OK for use by an expert in MOSFET design. By Prof. A First, On the front and back covers it states "This version of the text has been adapted and customized. Not for sale in the U.S.A. or Canada." It might be of interest to those involved in MOS design and manufacture, But it does not cover CMOS, which is a primary application of MOSFETs. While it might be suitable for an advanced graduate text for students who have already had a course (or two) on semiconductor device physics, it is difficult to follow for a beginning course since it is largely mathematical with an insufficient number of figures and few energy band diagrams which this reviewer believes is a major defect.

Operation and Modeling of the MOS Transistor has become a standard in academia and industry. Extensively revised and updated, the third edition of this highly acclaimed text provides a thorough treatment of the MOS transistor--the key element of modern microelectronic chips.

About the Author Yannis Tsividis is Charles Batchelor Professor of Electrical Engineering at Columbia University. His work with MOS transistors began in 1975 as part of his Ph.D. work at the University of California, Berkeley, in the context of the design and fabrication of the first fully-integrated MOS operational amplifier. He is a Fellow of IEEE. Among his awards are the 1984 IEEE W. R. G. Baker Prize for the best IEEE publication and the 2003 IEEE International Solid-State Circuits Conference Outstanding Paper Award. Colin McAndrew became involved with modeling semiconductor devices in 1987 and has contributed to the development of models for MOS, bipolar, and passive devices. He developed the backward-propagation-of-variation (BPV) technique for statistical modeling and has been a primary advocate of the use of Verilog-A and compilers for device modeling. He has a Ph.D. from the University of Waterloo, works at Freescale Semiconductor, and is a Fellow of the IEEE.