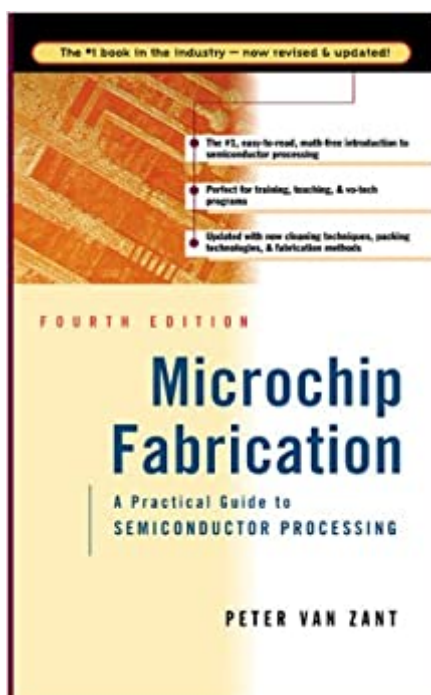


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# Microchip Fabrication: A Practical Guide To Semiconductor Processing



## Synopsis

Novice-friendly intro to semiconductor processing. The most readable and comprehensive guide to semiconductor processing, Peter Van Zant's *Microchip Fabrication* is considered the bible of basic microchip technology. Now in an updated new fourth edition, this completely math-free introduction to a complex field is an efficient tool for high-powered engineers and technology-clueless salespeople alike. You'll find fully illuminating, easy-reading explanations of semiconductor materials and process chemicals...contamination control...process yields...all aspects of basic patterning....doping, deposition, and metallization...wafer, device, and circuit evaluation...semiconductor devices and integrated circuit formation and types...and packaging. This new fourth edition puts at your fingertips new sections on: \*Copper metallization and damascene patterning\*BGA and CSP\*Cutting-edge cleaning techniques\*And more!

## Book Information

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## Customer Reviews

**NEW TO THIS EDITION:** Packaging Technologies Cleaning Techniques Copper

Metallization Damascene Patterning Other Fabrication Advances The #1 book in the industry--now revised & updated! A perfect introduction to the industry that's the backbone of the technology revolution, industry insider Peter Van Zant's *Microchip Fabrication* is a highly popular, novice-friendly guide to the entire process of semiconductor processing--from raw materials through shipping the finished, packaged device. Used for training, teaching, and vo-tech programs, and

tailor-made for any semiconductor professional, *Microchip Fabrication* features a straightforward, math-free approach. And it details semiconductors from the inside out, covering science basics, its fascinating history, and the latest technical leap forward. Inside, you'll follow semiconductors through every stage of fabrication. Testing, manufacturing processes, commercial integrated circuit types, and packaging are all explained in simple, nontechnical language. Along the way, Van Zant introduces challenging quizzes and review summaries that make *Microchip Fabrication* an ideal text or self-study guide. By the time you've finished this informative "guided tour," you'll have a solid working knowledge of all the important issues and processes, materials and methods involved in semiconductor technology, whether on the sub-atomic level or in the context of large-scale industrial practices.

Peter Van Zant is an internationally known semiconductor professional with an extensive background in process engineering, training, consulting, and writing. Principal of Peter Van Zant Associates, a firm that supplies writing, training, and consulting services to business and industry, he is the author of *Semiconductor Technology Glossary, Third Edition*; *Integrated Circuits Text*; *Safety First Manual*; and *Chip Packaging Manual*. His books and training materials are used by chip manufacturers, industry suppliers, colleges, and universities. Peter Van Zant Associates' customers include Intel, National Semiconductor, Applied Materials, Air Products and Chemicals, SCP Global Inc., and a number of educational institutions. Mr. Van Zant is also the elected District 1 Supervisor in his home county of Nevada in California. --This text refers to an out of print or unavailable edition of this title.

If you have or are in the process of getting your EE, don't bother with this book. As the title says, it's a "Practical Guide" for folks that either have an interest in the topic or wish to get a bit deeper into the issues involved in wafer and semiconductor manufacturing due to job requirements etc... it is not a text book. I would have given the book 5 stars except there are several glaring issues with this book. Given the target audience and general education level of its readers, I think some of the issues are inexcusable. Typos and grammatical errors abound in this book. The Editor at McGraw Hill must have been asleep or been so completely uninterested in the topic that they didn't bother to check. Also, there are issues with decimal point placement throughout the book. It's sufficiently technical that someone should have bothered to verify the figures before publishing. I also would like to have seen higher quality illustrations/pictures and some logic applied to their placement. This book is due for an update SOON. It positions die shifts to 180 nanometers as an up and coming

event. Intel currently has 90 nanometer manufacturing up and running, with products entering the channel in 4Q03. Not to mention, graphics chip companies and their fab partners have made the shift to 130 nanometers. These process and manufacturing changes bring a whole host of new issues, challenges, opportunities and technologies to the mix. All in all, this is a good book.

The book is very easy to read if you're a novice when it comes to microchip fabrication. I found that it could use some updating to include newer advancements in the industry.

I don't usually write reviews but I like this book so much that I had to. Let me start by saying that I was not sure to buy this book used because the reviews on used products are not good most of the time, but the way this company describes their book was convincing enough to buy it. For this price I will buy it and so I did get the book in less than a week I was surprised the last time I purchased a book it was more than a week to get to my door. The book was like new a used book that is why this company has my five stars. Good company to work with.

Good book for reference on semiconductor manufacturing. I recommend to use this book for starting in the electronics industry. Give you the basic understanding of the front end process.

Very good book

[A review of the 5th edition.] Zant gives an update of his long running book on chip making. It is useful as a quick overview of the salient steps used by many fabs. The text starts with a precis of the industry's history, and, naturally, the seminal and continued significance of Moore's Law. The wafer fabrication pages describe the predominant Chemical Vapour Deposition method. But the book also finds space for a quick explanation of Molecular Beam Epitaxy. Though the latter is still largely a research method. Patterning and photolithography are vital processing steps. You should have a solid grasp of these ideas from the relevant chapters. Later steps of layer deposition and metallisation build up the circuit. A lot of the text is basically unchanged from earlier editions. Since many key ideas have remained constant for decades. Rather, it has been the industry's singular success in applying those ideas to ever greater precision. Hence, the book explains why the decreasing linewidths (now in the deep submicron of around 0.18) and the move to 300mm wafers have kept us moving along Moore's Law. The book is roughly at an undergraduate level in material science or electrical engineering. [Professionals should seek more detailed texts.]

It's perfect. i will come next time . Nice and valuable. my best friend need it , delivery so quickly.

This book is clear and readable -- not your average text book. I'm making a mid-life career change from architect to patent writer for the semiconductor industry. This book has been invaluable. It's not full of a lot of formulas or theory, but it will definitely help you understand what is involved in manufacturing semiconductor devices. The only things I might ask for are 1) Better Proofreading, and 2) more pictures of the process machinery; there are a few, but the author relies mainly on diagrammatic drawings to illustrate equipment. But, that said, there are a lot of drawings and they are very well drawn (unlike some of the fuzzy drawing representations in Wolf's Vol. 1 of Semiconductor Devices for the VLSI Era. The VanZant book is way cheaper, too).

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