



Physics of Semiconductor Devices, 3rd Edition

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DESCRIPTION

The Third Edition of the standard textbook and reference in the field of semiconductor devices

This classic book has set the standard for advanced study and reference in the semiconductor device field. Now completely updated and reorganized to reflect the tremendous advances in device concepts and performance, this Third Edition remains the most detailed and exhaustive single source of information on the most important semiconductor devices. It gives readers immediate access to detailed descriptions of the underlying physics and performance characteristics of all major bipolar, field-effect, microwave, photonic, and sensor devices.

Designed for graduate textbook adoptions and reference needs, this new edition includes:

- A complete update of the latest developments
- New devices such as three-dimensional MOSFETs, MODFETs, resonant-tunneling diodes, semiconductor sensors, quantum-cascade lasers, single-electron transistors, real-space transfer devices, and more
- Materials completely reorganized
- Problem sets at the end of each chapter
- All figures reproduced at the highest quality

Physics of Semiconductor Devices, Third Edition offers engineers, research scientists, faculty, and students a practical basis for understanding the most important devices in use today and for evaluating future device performance and limitations.

A Solutions Manual is available from the editorial department.

ABOUT THE AUTHOR

S. M. Sze received his PhD in electrical engineering from Stanford University. He was with Bell Telephone Laboratories from 1963–1989, joining the faculty of the Department of Electronics Engineering, National Chiao Tung University (NCTU) in 1990. Dr. Sze is currently Distinguished Chair Professor of NCTU and has served as a visiting professor to many academic institutions. He has made fundamental and pioneering contributions to semiconductor devices; of particular importance is his coinvention of nonvolatile semiconductor memory such as flash memory and EEPROM. Dr. Sze has authored, coauthored, or edited over 200 technical papers and twelve books. His book *Physics of Semiconductor Devices* (Wiley) is one of the most cited works in contemporary engineering and applied science publications (over 15,000 citations from ISI Press). Dr. Sze is the recipient of numerous awards and holds such titles as Life Fellow of the IEEE, Academician of the Academia Sinica, and member of the US National Academy of Engineering.

Kwok K. Ng received his PhD from Columbia University in 1979 and BS from Rutgers University in 1975, both in electrical engineering. He joined Bell Laboratories of AT&T in Murray Hill, New Jersey, in 1980, which spun off as part of Lucent Technologies in 1996. He became affiliated with Agere Systems in Allentown, Pennsylvania, as the microelectronics unit became independent in 2001. He has been with MVC in San Jose, California, since 2005. Dr. Ng has also held positions as editor of *IEEE Electron Device Letters* and liaison to IEEE Press. He is the author of the *Complete Guide to Semiconductor Devices, Second Edition* (Wiley).

NEW TO EDITION

This edition is significantly revised, with nearly 50% revision; in addition, new examples and end-of-chapter problems are found throughout the text.

FEATURES

- Significantly revised -- last edition appeared in 1981, and this new edition is nearly 50% revised to reflect changes in the field
- Highly illustrated -- more than 650 figures throughout
- Includes a plethora of worked examples and end-of-chapter problems
- Solutions Manual is available from the editorial department

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