DESCRIPTION

Semiconductor devices are ubiquitous in today's world and found increasingly in cars, kitchens, and electronic door locks, attesting to their presence in our daily lives. This comprehensive book brings you the fundamentals of semiconductor device theory from basic quantum physics to computer aided design.

Advanced Theory of Semiconductor Devices will help improve your understanding of computer simulation devices through a thorough discussion of basic equations, their validity, and numerical solutions as they are contained in current simulation tools. You will gain state-of-the-art knowledge of devices used in both III-V compounds and silicon technology. Specially featured are novel approaches and explanations of electronic transport, particularly in p-n junction diodes. Close attention is also given to innovative treatments of quantum level laser diodes and hot electron effects in silicon technology.

This in-depth book is designed expressly for graduate students, research scientists, and research engineers in solid state electronics who want to gain a better grasp of the principles underlying semiconductor devices.

ABOUT THE AUTHOR

About the Author Karl Hess holds the Swanlund Endowed Chair and is professor of electrical and computer engineering and of physics at the University of Illinois, Urbana-Champaign. Dr. Hess has dedicated a major portion of his research to electronic
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