

Comsol Rf Waveguide

Microwave Circuit Modeling Using Electromagnetic Field Simulation
 Silicon Photonics II
 Advanced Engineering Electromagnetics
 Practical Guide to RF-MEMS
 Concepts, Devices, and Techniques (Volume One)
 for Material Heating, Sensing, and Plasma Generation
 Direct Natural Gas Conversion to Value-Added Chemicals
 Quantum Plasmonics
 ICFAS 2020
 Components and Integration
 Advanced Mechanical Science and Technology for the Industrial Revolution 4.0
 RF and Microwave Microelectronics Packaging
 Integrated Photonics
 A Problem Solving Approach
 Theory and Computation of Electromagnetic Fields
 Molding the Flow of Light - Second Edition
 Advanced Computer and Communication Engineering Technology
 RF Module
 The Finite Element Method in Electromagnetics
 22nd International Symposium, VDAT 2018, Madurai, India, June 28-30, 2018, Revised Selected Papers
 Microwave/RF Applicators and Probes for Material Heating, Sensing, and Plasma Generation
 A First Principles Approach
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 Multiphysics Modeling Using COMSOL?
 Fundamentals and Applications
 Acoustic Metamaterials and Phononic Crystals
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 Acoustic Absorbers and Diffusers
 Electromagnetic Field Theory
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 Microwave/RF Applicators and Probes
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 Proceedings of the 6th International Conference on Fundamental and Applied Sciences

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MELENDÉZ LORELAI

Microwave Circuit Modeling Using Electromagnetic Field Simulation BoD - Books on Demand

COMSOL 5 and MATLAB are valuable software modeling tools for engineers and scientists. This updated edition includes five new models and explores a wide range of models in coordinate systems from 0D to 3D, introducing the numerical analysis techniques employed in COMSOL 5.6 and MATLAB software. The text presents electromagnetic, electronic, optical, thermal physics, and biomedical models as examples. It presents the fundamental concepts in the models and the step-by-step instructions needed to build each model. The companion files include all the built models for each step-by-step example presented in the text and the related animations, as specified. The book is designed to introduce modeling to an experienced engineer or can also be used for upper level undergraduate or graduate courses. **FEATURES:** Focuses on COMSOL 5.x and MATLAB models that demonstrate the use of concepts for later application in engineering, science, medicine, and biophysics for the development of devices and systems. Includes companion files with executable copies of each model and related animations. Includes detailed discussions of possible modeling errors and results. Uses a step-by-step modeling methodology linked to the Fundamental Laws of Physics. The companion files are also available online by emailing the publisher with proof of purchase at info@merclearning.com.

Silicon Photonics II Elsevier

Advanced Engineering Electromagnetics John Wiley & Sons

Advanced Engineering Electromagnetics Springer Science & Business Media

This book includes more than 30 papers from the first FZU-OPU-NTOU Joint Symposium on Advanced Mechanical Science and Technology for the Industrial Revolution 4.0, held at Fuzhou University, China, in December 2016. The symposium was organized by Fuzhou University (FZU), Osaka Prefecture University (OPU) and National Taiwan Ocean University (NTOU). The authors include several professors from universities in China, Japan, and Taiwan as well as four distinguished invited professors from Canada, Korea, Japan, and Taiwan. The book covers all important aspects related to the 4.0 industrial revolution: robotics and mechatronics; sensors, measurements, and instrumentation; mechanical dynamics and controls; mechanical design; vehicle systems and technologies; fluid mechanics; monitoring and diagnosis, prognosis, and health management; advanced signal processing; and big data; all of which are subjects with great potential in the field of mechanical engineering.

Practical Guide to RF-MEMS BoD - Books on Demand

This comprehensive book presents all aspects of acoustic metamaterials and phononic crystals. The emphasis is on acoustic wave propagation phenomena at interfaces such as refraction, especially unusual refractive properties and negative refraction. A thorough discussion of the mechanisms leading to such refractive phenomena includes local resonances in metamaterials and scattering in phononic crystals.

Concepts, Devices, and Techniques (Volume One) Springer

About The Book: The book covers the major topics of microwave engineering. Its presentation defines the accepted standard for both advanced undergraduate and graduate level courses on microwave engineering. It is an essential reference book for the practicing microwave engineer

for Material Heating, Sensing, and Plasma Generation Springer Science & Business Media

Multiphysics Modeling Using COMSOL® rapidly introduces the senior level undergraduate, graduate or professional scientist or engineer to the art and science of computerized modeling for physical systems and devices. It offers a step-by-step modeling methodology through examples that are linked to the Fundamental Laws of Physics through a First Principles Analysis approach. The text explores a breadth of multiphysics models in coordinate systems that range from 1D to 3D and introduces the readers to the numerical analysis modeling techniques employed in the COMSOL® Multiphysics® software. After readers have built and run the examples, they will have a much firmer understanding of the concepts, skills, and benefits acquired from the use of computerized modeling techniques to solve their current technological problems and to explore new areas of application for their particular technological areas of interest.

Direct Natural Gas Conversion to Value-Added Chemicals CRC Press

Handbook of Optoelectronics offers a self-contained reference from the basic science and light sources to devices and modern applications across the entire spectrum of disciplines utilizing optoelectronic technologies. This second edition gives a complete update of the original work with a focus on systems and applications. Volume I covers the details of optoelectronic devices and techniques including semiconductor lasers, optical detectors and receivers, optical fiber devices, modulators, amplifiers, integrated optics, LEDs, and engineered optical materials with brand new chapters on silicon photonics, nanophotonics, and graphene optoelectronics. Volume II addresses the underlying system technologies enabling state-of-the-art communications, imaging, displays, sensing, data processing, energy conversion, and actuation. Volume III is brand new to this edition, focusing on applications in infrastructure, transport, security, surveillance, environmental monitoring, military, industrial, oil and gas, energy generation and distribution, medicine, and free space. No other resource in the field comes close to its breadth and depth, with contributions from leading industrial and academic institutions around the world. Whether used as a reference, research tool, or broad-based introduction to the field, the Handbook offers everything you need to get started. (The previous edition of this title was published as Handbook of Optoelectronics, 9780750306461.) John P. Dakin, PhD, is professor (emeritus) at the Optoelectronics Research Centre, University of Southampton, UK. Robert G. W. Brown, PhD, is chief executive officer of the American Institute of Physics and an adjunct full professor in the Beckman Laser Institute and Medical Clinic at the University of California, Irvine.

Quantum Plasmonics Springer Science & Business Media

Closes the gap between hardcore-theoretical and purely experimental RF-MEMS books. The book covers, from a practical viewpoint, the most critical steps that have to be taken in order to develop novel RF-MEMS device concepts. Prototypical RF-MEMS devices, both including lumped components and complex networks, are presented at the beginning of the book as reference examples, and these are then discussed from different perspectives with regard to design, simulation, packaging, testing, and post-fabrication modeling. Theoretical concepts are introduced when necessary to complement the practical hints given for all RF-MEMS development stages. Provides researchers and engineers with invaluable practical hints on how to develop novel RF-MEMS device concepts Covers all critical steps, dealing with design, simulation, optimization, characterization and fabrication of MEMS for radio-frequency applications Addresses frequently disregarded issues, explicitly treating the hard to predict interplay between the three-dimensional device structure and its electromagnetic functionality Bridges theory and experiment, fundamental concepts are introduced with the application in mind, and simulation results are validated against experimental results Appeals to the practice-oriented R&D reader: design and simulation examples are based on widely known software packages such as ANSYS and the hardware description language Verilog.

ICFAS 2020 Springer

RF and Microwave Microelectronics Packaging presents the latest developments in packaging for high-frequency electronics. It will appeal to practicing engineers in the electronic packaging and high-frequency electronics fields and to academic researchers interested in understanding leading issues in the commercial sector. It covers the latest developments in thermal management, electrical/RF/thermal-mechanical designs and simulations, packaging and processing methods as well as other RF/MW packaging-related fields.

Components and Integration Springer Science & Business Media

Theory of Electromagnetic Well Logging provides a much-needed and complete analytical method for electromagnetic well logging technology. The book presents the physics and mathematics behind the effective measurement of rock properties using boreholes, allowing geophysicists, petrophysicists, geologists and engineers to interpret them in a more rigorous way. Starting with the fundamental concepts, the book then moves on to the more classic subject of wireline induction logging, before exploring the subject of LWD logging, concluding with new thoughts on electromagnetic telemetry. Theory of Electromagnetic Well Logging is the only book offering an in-depth discussion of the analytical and numerical techniques needed for expert use of those new logging techniques. Features in-depth analysis of the analytical and numerical techniques needed for expert use of logging techniques Includes software codes, providing a handy tool for understanding logging tool physics and design of new logging tools Provides a detailed glossary of all key terms within the introductory chapter

William Andrew

Absorbers and diffusers are two of the main design tools for altering the acoustic conditions of rooms, semi-enclosed spaces and the outdoor environment. Their correct use is important for delivering high quality acoustics. Unique and authoritative, this book describes how to effectively measure, model, design and apply diffusers and absorbers. It is a resource for new and experienced acousticians, seeking an understanding of the evolution, characteristics and application of modern diffusers. Absorption is a more established technology and so the book blends traditional designs with modern developments. The book covers practical and theoretical aspects of absorbers and diffusers and is well illustrated with examples of installations and case studies. This new edition brings Acoustic Absorbers and Diffusers up-to-date with current research, practice and standards. New developments in measurement, materials, theory and practice since the first edition (published in 2004) are included. The sections on absorbers are extended to include more about noise control.

Advanced Mechanical Science and Technology for the Industrial Revolution 4.0 John Wiley & Sons

A new edition of the leading textbook on the finite element method, incorporating major advancements and further applications in the field of electromagnetics The finite element method (FEM) is a powerful simulation technique used to solve boundary-value problems in a variety of

engineering circumstances. It has been widely used for analysis of electromagnetic fields in antennas, radar scattering, RF and microwave engineering, high-speed/high-frequency circuits, wireless communication, electromagnetic compatibility, photonics, remote sensing, biomedical engineering, and space exploration. The Finite Element Method in Electromagnetics, Third Edition explains the method's processes and techniques in careful, meticulous prose and covers not only essential finite element method theory, but also its latest developments and applications—giving engineers a methodical way to quickly master this very powerful numerical technique for solving practical, often complicated, electromagnetic problems. Featuring over thirty percent new material, the third edition of this essential and comprehensive text now includes: A wider range of applications, including antennas, phased arrays, electric machines, high-frequency circuits, and crystal photonics The finite element analysis of wave propagation, scattering, and radiation in periodic structures The time-domain finite element method for analysis of wideband antennas and transient electromagnetic phenomena Novel domain decomposition techniques for parallel computation and efficient simulation of large-scale problems, such as phased-array antennas and photonic crystals Along with a great many examples, The Finite Element Method in Electromagnetics is an ideal book for engineering students as well as for professionals in the field.

RF and Microwave Microelectronics Packaging Elsevier

This book constitutes the refereed proceedings of the 22st International Symposium on VLSI Design and Test, VDAT 2018, held in Madurai, India, in June 2018. The 39 full papers and 11 short papers presented together with 8 poster papers were carefully reviewed and selected from 231 submissions. The papers are organized in topical sections named: digital design; analog and mixed signal design; hardware security; micro bio-fluidics; VLSI testing; analog circuits and devices; network-on-chip; memory; quantum computing and NoC; sensors and interfaces.

Integrated Photonics Springer Science & Business Media

Proceedings of a NATO ARW held in Vimeiro, Portugal, May 11-15, 1992

A Problem Solving Approach Jones & Bartlett Learning

This hands-on introduction to silicon photonics engineering equips students with everything they need to begin creating foundry-ready designs.

Theory and Computation of Electromagnetic Fields John Wiley & Sons

The optical filter is resonator based. The required passband shape of ring resonator-filters can be custom designed by the use of configurations of various ring coupled resonators. This book describes the current state-of-the-art on these devices. It provides an in-depth knowledge of the simulation, fabrication and characterization of ring resonators for use as example filters, lasers, sensors.

Molding the Flow of Light - Second Edition Artech House

Since it was first published in 1995, Photonic Crystals has remained the definitive text for both undergraduates and researchers on photonic band-gap materials and their use in controlling the propagation of light. This newly expanded and revised edition covers the latest developments in the field, providing the most up-to-date, concise, and comprehensive book available on these novel materials and their applications. Starting from Maxwell's equations and Fourier analysis, the authors develop the theoretical tools of photonics using principles of linear algebra and symmetry, emphasizing analogies with traditional solid-state physics and quantum theory. They then investigate the unique phenomena that take place within photonic crystals at defect sites and surfaces, from one to three dimensions. This new edition includes entirely new chapters describing important hybrid structures that use band gaps or periodicity only in some directions: periodic waveguides, photonic-crystal slabs, and photonic-crystal fibers. The authors demonstrate how the capabilities of photonic crystals to localize light can be put to work in devices such as filters and splitters. A new appendix provides an overview of computational methods for electromagnetism. Existing chapters have been considerably updated and expanded to include many new three-dimensional photonic crystals, an extensive tutorial on device design using temporal coupled-mode theory, discussions of diffraction and refraction at crystal interfaces, and more. Richly illustrated and accessibly written, Photonic Crystals is an indispensable resource for students and researchers. Extensively revised and expanded Features improved graphics throughout Includes new chapters on photonic-crystal fibers and combined index-and band-gap-guiding Provides an introduction to coupled-mode theory as a powerful tool for device design Covers many new topics, including omnidirectional reflection, anomalous refraction and diffraction, computational photonics, and much more.

Advanced Computer and Communication Engineering Technology Springer

This book covers diverse aspects of advanced computer and communication engineering, focusing specifically on industrial and manufacturing theory and applications of electronics, communications, computing and information technology. Experts in research, industry, and academia present the latest developments in technology, describe applications involving cutting-edge communication and computer systems, and explore likely future trends. In addition, a wealth of new algorithms that assist in solving computer and communication engineering problems are presented. The book is based on presentations given at ICOCOE 2015, the 2nd International Conference on Communication and Computer Engineering. It will appeal to a wide range of professionals in the field, including telecommunication engineers, computer engineers and scientists, researchers, academics and students.

RF Module Mercury Learning and Information

Annotation This practical "how to" book is an ideal introduction to electromagnetic field-solvers. Where most books in this area are strictly theoretical, this unique resource provides engineers with helpful advice on selecting the right tools for their RF (radio frequency) and high-speed digital circuit design work

The Finite Element Method in Electromagnetics Springer

Silicon photonics technology, which has the DNA of silicon electronics technology, promises to provide a compact photonic integration platform with high integration density, mass-producibility, and excellent cost performance. This technology has been used to develop and to integrate various photonic functions on silicon substrate. Moreover, photonics-electronics convergence based on silicon substrate is now being pursued. Thanks to these features, silicon photonics will have the potential to be a superior technology used in the construction of energy-efficient cost-effective apparatuses for various applications, such as communications, information processing, and sensing. Considering the material characteristics of silicon and difficulties in microfabrication technology, however, silicon by itself is not necessarily an ideal material. For example, silicon is not suitable for

light emitting devices because it is an indirect transition material. The resolution and dynamic range of silicon-based interference devices, such as wavelength filters, are significantly limited by fabrication errors in microfabrication processes. For further performance improvement, therefore, various assisting materials, such as indium-phosphide, silicon-nitride, germanium-tin, are now being imported into silicon photonics by using various heterogeneous integration technologies, such as low-temperature film deposition and wafer/die bonding. These assisting materials and

heterogeneous integration technologies would also expand the application field of silicon photonics technology. Fortunately, silicon photonics technology has superior flexibility and robustness for heterogeneous integration. Moreover, along with photonic functions, silicon photonics technology has an ability of integration of electronic functions. In other words, we are on the verge of obtaining an ultimate technology that can integrate all photonic and electronic functions on a single Si chip. This e-Book aims at covering recent developments of the silicon photonic platform and novel functionalities with heterogeneous material integrations on this platform.