Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library)

Allen Taflove, Steven G. Johnson, Ardavan Oskooi

Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library)

Allen Taflove, Steven G. Johnson, Ardavan Oskooi

Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) Allen Taflove, Steven G. Johnson, Ardavan Oskooi
Advances in photonics and nanotechnology have the potential to revolutionize humanity s ability to communicate and compute. To pursue these advances, it is mandatory to understand and properly model interactions of light with materials such as silicon and gold at the nanoscale, i.e., the span of a few tens of atoms laid side by side. These interactions are governed by the fundamental Maxwell s equations of classical electrodynamics, supplemented by quantum electrodynamics.

This book presents the current state-of-the-art in formulating and implementing computational models of these interactions. Maxwell s equations are solved using the finite-difference time-domain (FDTD) technique, pioneered by the senior editor, whose prior Artech books in this area are among the top ten most-cited in the history of engineering. You discover the most important advances in all areas of FDTD and PSTD computational modeling of electromagnetic wave interactions.

This cutting-edge resource helps you understand the latest developments in computational modeling of nanoscale optical microscopy and microchip lithography. You also explore cutting-edge details in modeling nanoscale plasmonics, including nonlocal dielectric functions, molecular interactions, and multi-level semiconductor gain. Other critical topics include nanoscale biophotonics, especially for detecting early-stage cancers, and quantum vacuum, including the Casimir effect and blackbody radiation.

Contents: Subpixel Smoothing of Curved Material Surfaces. Wave Source Conditions and Local Density of States. Perfectly Matched Layers and Adiabatic Absorbers. Plasmonics. Resonant Device Modeling and Design. Metamaterials and Negative Refraction. Transformation Optics. Meep (MIT FDTD Free Software). Biophotonics. Lithography. Computational Microscopy. Spatial Solutions. Quantum Phenomena. Hardware Acceleration.

Download and Read Free Online Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) Allen Taflove, Steven G. Johnson, Ardavan Oskooi

---

From reader reviews:

Timmy Gallegos:

Book will be written, printed, or created for everything. You can realize everything you want by a publication. Book has a different type. As we know that book is important thing to bring us around the world. Next to that you can your reading ability was fluently. A guide Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) will make you to become smarter. You can feel considerably more confidence if you can know about almost everything. But some of you think this open or reading any book make you bored. It is far from make you fun. Why they can be thought like that? Have you searching for best book or acceptable book with you?

Coleen Faircloth:

What do you about book? It is not important to you? Or just adding material when you want something to explain what the ones you have problem? How about your time? Or are you busy person? If you don't have spare time to accomplish others business, it is gives you the sense of being bored faster. And you have extra time? What did you do? All people has many questions above. The doctor has to answer that question since just their can do this. It said that about e-book. Book is familiar in each person. Yes, it is suitable. Because start from on jardín de infancia until university need this kind of Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) to read.

Daniel Colon:

Are you kind of busy person, only have 10 or even 15 minute in your day to upgrading your mind ability or thinking skill actually analytical thinking? Then you have problem with the book compared to can satisfy your short space of time to read it because this all time you only find publication that need more time to be read. Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) can be your answer given it can be read by you who have those short extra time problems.

Kenny Crowther:

Guide is one of source of understanding. We can add our expertise from it. Not only for students but in addition native or citizen want book to know the revise information of year in order to year. As we know those guides have many advantages. Beside we all add our knowledge, may also bring us to around the world. From the book Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) we can acquire more advantage. Don't someone to be creative people? For being creative person must prefer to read a book. Only choose the best book that suited with your aim. Don't become doubt to change your life at this time book Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library). You

can more appealing than now.

Read Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) by Allen Taflove, Steven G. Johnson, Ardavan Oskooi for online ebook

Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) by Allen Taflove, Steven G. Johnson, Ardavan Oskooi Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) by Allen Taflove, Steven G. Johnson, Ardavan Oskooi books to read online.

Online Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) by Allen Taflove, Steven G. Johnson, Ardavan Oskooi ebook PDF download

Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) by Allen Taflove, Steven G. Johnson, Ardavan Oskooi Doc

Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) by Allen Taflove, Steven G. Johnson, Ardavan Oskooi Mobipocket

Advances in FDTD Computational Electrodynamics: Photonics and Nanotechnology (Artech House Antennas and Propagation Library) by Allen Taflove, Steven G. Johnson, Ardavan Oskooi EPub