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""Chapter 2 Unconditionally Stable Laguerre Polynomial-Based FDTD Method""""2.1 INTRODUCTION""; ""2.2 FORMULATION OF THE CONVENTIONAL 3-D LAGUERRE-BASED FDTD METHOD""; ""2.3 FORMULATION OF AN EFFICIENT 3-D LAGUERRE-BASED FDTD METHOD""; ""2.4 PML ABSORBING BOUNDARY CONDITION""; ""2.5 NUMERICAL RESULTS""; ""2.5.1 Parallel-Plate Capacitor: Uniform 3-D Grid""; ""2.5.2 Shielded Microstrip Line: Graded Grid in One Direction""; ""2.5.3 PML Absorbing Boundary Condition Performance""; ""2.6 SUMMARY AND CONCLUSIONS""; ""REFERENCES""
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Sommario/riassunto

This book presents the current state-of-the-art in formulating and implementing computational models of light with materials such as silicon and gold at the nanoscale. Maxwell's equations are solved using the finite-difference time-domain (FDTD) technique. It will help you understand the latest developments in computational modeling of nanoscale optical microscopy and microchip lithography. You will also explore cutting-edge details in modeling nanoscale plasmonics, including nonlocal dielectric functions, molecular interactions, and multi-level semiconductor gain. Other topics include nanoscale biophotonics, especially for detecting early-stage cancers, and quantum vacuum, including the Casimir effect and blackbody radiation. --