1. Record Nr. UNINA9910437928803321

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Titolo	Applications of advanced electromagnetics : components and systems / / Guennadi A. Kouzaev
Pubbl/distr/stampa	Berlin ; ; New York, : Springer, c2013
ISBN	9781283741972 1283741970 9783642303104 3642303102
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (541 p.)
Collana	Lecture notes in electrical engineering, , 1876-1100 ; ; 169
Disciplina	537
Soggetti	Electromagnetism Electromagnetic devices
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	From the Contents: Basic Electromagnetics -- Theory of Waveguides -- Waveguide Discontinuities and Components -- Geometrical and Topological Approaches to the EM Field and Boundary Value Problems -- Technologies for Microwave and High-speed Electronics -- Transmission Lines and their EM Models for the Extended Frequency Bandwidth Applications -- Inter-component Transitions for Ultra-bandwidth Silicon Integrations and Micro- and Millimeter-wave Printed Circuit Boards -- Integrated Filters and Power Distribution Circuits -- Circuit Approach for Simulation of EM-Quantum Components -- EM Topological Signaling and Computing.
Sommario/riassunto	This text, directed to the microwave engineers and Master and PhD students, is on the use of electromagnetics to the development and design of advanced integrated components distinguished by their extended field of applications. The results of hundreds of authors scattered in numerous journals and conference proceedings are carefully reviewed and classed. Several chapters are to refresh the knowledge of readers in advanced electromagnetics. New techniques are represented by compact electromagnetic–quantum equations which can be used in modeling of microwave-quantum integrated circuits of

future In addition, a topological method to the boundary value problem analysis is considered with the results and examples. One extended chapter is for the development and design of integrated components for extended bandwidth applications, and the technology and electromagnetic issues of silicon integrated transmission lines, transitions, filters, power dividers, directional couplers, etc are considered. Novel prospective interconnects based on different physical effects are reviewed as well. The ideas of topology is applicable to the electromagnetic signaling and computing, when the vector field maps can carry discrete information, and this area and the results in topological signaling obtained by different authors are analyzed, including the recently designed predicate logic processor operating spatially represented signal units. The book is rich of practical examples, illustrations, and references and useful for the specialists working at the edge of contemporary technology and electromagnetics.