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Titolo	Electromagnetic Waves in Complex Systems : Selected Theoretical and Applied Problems // edited by Yuriy Sirenko, Lyudmyla Velychko
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Disciplina	539.2
Soggetti	Optics Electrodynamics Microwaves Optical engineering Superconductivity Superconductors Lasers Photonics Classical Electrodynamics Microwaves, RF and Optical Engineering Strongly Correlated Systems, Superconductivity Optics, Lasers, Photonics, Optical Devices
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Preface -- New Analytical Solutions of Selected Electromagnetic Problems -- Dyadic Green's Function of a Biaxial Anisotropic Medium -- Operator Fresnel Formulas in the Scattering Theory of Guided Modes -- Two-Dimensionally Periodic Gratings: Pulsed and Steady-State Waves in Nonregular Rectangular Floquet Channel -- The Exact Absorbing Conditions Method in the Analysis of Open Electrodynamic Structures -- High-Power Short Pulse Compression: Analysis and Modeling -- Diffraction Radiation Phenomena: Physical Analysis and Applications.

## Sommario/riassunto

This book gives guidance to solve problems in electromagnetics, providing both examples of solving serious research problems as well as the original results to encourage further investigations. The book contains seven chapters on various aspects of resonant wave scattering, each solving one original problem. All of them are unified by the authors' desire to show advantages of rigorous approaches at all stages, from the formulation of a problem and the selection of a method to the interpretation of results. The book reveals a range of problems associated with wave propagation and scattering in natural and artificial environments or with the design of antennas elements. The authors invoke both theoretical (analytical and numerical) and experimental techniques for handling the problems. Attention is given to mathematical simulations, computational efficiency, and physical interpretation of the experimental results. The book is written for students, graduate students and young researchers. .

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