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Nota di contenuto	Carbon, a unique model material for condensed matter physics and engineering science -- Electromagnetic properties of nanohelices -- Electrodynamics of graphene/polymer multilayers in the GHz frequency domain -- Quantum Dot Lattice as Nano-Antenna for Collective Spontaneous Emission -- Wave packet dynamical calculations for carbon nanostructures -- Carbon nanotubes and graphene nanoribbons for terahertz applications -- Plasmon modes in extrinsic graphene: ab initio simulations vs semi-classical models -- Graphene-enhanced metamaterials in THz applications.-Phonon-assisted radiofrequency absorption by gold nanoparticles resulting in hyperthermia -- An optical adventure in sexual deception -- Optical properties of semiconductor colloidal quantum wells.-Synthesis of pyrolytic carbon films on dielectric substrates -- Microwave properties of ultrathin pyrolytic carbon films -- Conductive and shielding properties of MWCNTs/polymer nanocomposites with aligned filler distribution -- Structural, morphological and magnetic properties of nickel-carbon nanocomposites prepared by solid-phase pyrolysis of Ni

phthalocyanine.

Sommario/riassunto

This book presents the most relevant and recent results in the study of “Nanoelectromagnetics”, a recently born fascinating research discipline, whose popularity is fast arising with the intensive penetration of nanotechnology in the world of electronics applications. Studying nanoelectromagnetics means describing the interaction between electromagnetic radiation and quantum mechanical low-dimensional systems: this requires a full interdisciplinary approach, the reason why this book hosts contributions from the fields of fundamental and applied electromagnetics, of chemistry and technology of nanostructures and nanocomposites, of physics of nano-structures systems, etc. The book is aimed at providing the reader with the state of the art in Nanoelectromagnetics, from theoretical modelling to experimental characterization, from design to synthesis, from DC to microwave and terahertz applications, from the study of fundamental material properties to the analysis of complex systems and devices, from commercial thin-film coatings to metamaterials to circuit components and nanodevices. The book is intended as a reference in advanced courses for graduate students and as a guide for researchers and industrial professionals involved in nanoelectronics and nanophotonics applications.
