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Titolo	Electromagnetic and Acoustic Waves in Bioengineering Applications // Edited by Ivo Cap [and three others]
Pubbl/distr/stampa	London : , : IntechOpen, , 2021 ©2021
Descrizione fisica	1 online resource (226 pages)
Disciplina	539.2
Soggetti	Electromagnetic waves
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Sommario/riassunto	The book deals with the analysis of oscillations, mechanical and electromagnetic waves, and their use in medicine. Each chapter contains the theoretical basis and the use of relevant phenomena in medical practice. Description of oscillations is important for understanding waves and the nature of magnetic resonance. A chapter on mechanical waves describes the origin and properties of sound, infrasound and ultrasound, their medical applications, and perception of sound by human hearing. A chapter on electromagnetic waves examines their origin, properties, and applications in therapy and diagnostics. Subsequent chapters describe how interference and diffraction lead to applications like optical imaging, holography, virtual reality, and perception of light by human vision. Also addressed is how quantum properties of radiation helped develop the laser scalpel, fluorescence microscopy, spectroscopy, X-rays, and gamma radiation.