1. Record Nr. UNINA9910782365903321 Autore Boyd Robert W. <1948-> Titolo Nonlinear optics [[electronic resource] /] / Robert W. Boyd Amsterdam;; Boston,: Academic Press, c2008 Pubbl/distr/stampa **ISBN** 1-281-76369-1 9786611763695 0-08-056959-5 0-08-048596-0 Edizione [3rd ed.] Descrizione fisica 1 online resource (635 p.) 535/.2 Disciplina Soggetti Nonlinear optics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. Front cover; Nonlinear Optics; Copyright page; Contents; Preface to the Nota di contenuto Third Edition; Preface to the Second Edition; Preface to the First Edition; Chapter 1. The Nonlinear Optical Susceptibility; 1.1. Introduction to Nonlinear Optics; 1.2. Descriptions of Nonlinear Optical Processes; 1.3. Formal Definition of the Nonlinear Susceptibility: 1.4. Nonlinear Susceptibility of a Classical Anharmonic Oscillator; 1.5. Properties of the Nonlinear Susceptibility; 1.6. Time-Domain Description of Optical Nonlinearities: 1.7. Kramers-Kronig Relations in Linear and Nonlinear Optics: Problems: References Chapter 2. Wave-Equation Description of Nonlinear Optical Interactions 2.1. The Wave Equation for Nonlinear Optical Media; 2.2. The Coupled-Wave Equations for Sum-Frequency Generation; 2.3. Phase Matching; 2.4. Quasi-Phase-Matching; 2.5. The Manley-Rowe Relations; 2.6. Sum-Frequency Generation; 2.7. Second-Harmonic Generation; 2.8. Difference-Frequency Generation and Parametric Amplification; 2.9. Optical Parametric Oscillators; 2.10. Nonlinear Optical Interactions with Focused Gaussian Beams; 2.11. Nonlinear Optics at an Interface; Problems; References Chapter 3. Quantum-Mechanical Theory of the Nonlinear Optical Susceptibility3.1. Introduction; 3.2. Schrodinger Calculation of

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Sommario/riassunto

Nonlinear optics is the study of the interaction of intense laser light with matter. The third edition of this textbook has been rewritten to conform to the standard SI system of units and includes comprehensively updated material on the latest developments in the field. The book presents an introduction to the entire field of optical physics and specifically the area of nonlinear optics, covering fundamental issues and applied aspects of this exciting area. Nonlinear Optics will have lasting appeal to a wide audience of physics, optics, and electrical engineering students, as we