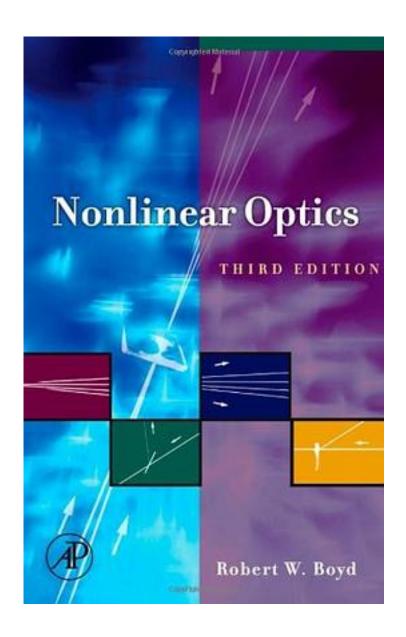
## Nonlinear Optics, Third Edition



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著者:Robert W. Boyd

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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 introduces the entire field of optical physics and specifically the area of nonlinear optics. It focuses on the fundamental issues including the electromagnetic origin of optical phenomena, the quantum mechanical description of the optical properties of matter, the role of spatial symmetries in determining the optical response, causality and Kramers Kronig relations, and ultrafast and high intensity optical effects. The book also covers applied aspects of nonlinear optics such as harmonic generation, the operation of parametric oscillators, optical switching, photonics, materials issues in nonlinear optics, and processes such as laser damage that can restrict the use of nonlinear optics.

This edition contains new material on:

- . Applications of harmonic generation including applications within the fields of microscopy and biophotonics
- . Electromagnetically induced transparency
- . Spectroscopy based on coherent anti-Stokes Raman scattering (CARS)

Nonlinear Optics appeals to a wide audience of physics, optics, and electrical engineering students, as well as to working researchers and engineers. Those in related fields, such as materials science and chemistry, will also find this book of particular interest.

- \* Presents an introduction to the entire field of optical physics from the perspective of nonlinear optics.
- \* Combines first rate pedagogy with a treatment of fundamental aspects of nonlinear optics
- \* Covers all the latest topics and technology in this ever-evolving industry
- \* Strong emphasis on the fundamentals

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