Contents

1	Introduction	1
2	Nonlinear Optical Susceptibilities	13
3	General Description of Wave Propagation in Nonlinear Media	42
4	Electrooptical and Magnetooptical Effects	53
5	Optical Rectification and Optical Field-Induced Magnetization	57
6	Sum-Frequency Generation	67
7	Harmonic Generation	86
8	Difference-Frequency Generation	108
9	Parametric Amplification and Oscillation	117
10	Stimulated Raman Scattering	141
11	Stimulated Light Scattering	187
12	Two-Photon Absorption	202
13	High-Resolution Nonlinear Optical Spectroscopy	211
14	Four-Wave Mixing	242
15	Four-Wave Mixing Spectroscopy	266
16	Optical-Field-Induced Birefringence	286
17	Self-Focusing	303
18	Multiphoton Spectroscopy	334

19	Detection of Rare Atoms and Molecules	349
20	Laser Manipulation of Particles	366
21	Transient Coherent Optical Effects	379
22	Strong Interaction of Light with Atoms	413
23	Infrared Multiphoton Excitation and Dissociation of Molecules	437
24	Laser Isotope Separation	466
25	Surface Nonlinear Optics	479
26	Nonlinear Optics in Optical Waveguides	505
27	Optical Breakdown	528
28	Nonlinear Optical Effects in Plasmas	541
In	dex	555