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Descrizione fisica	1 online resource (XIII, 470 p. 88 illus., 4 illus. in color.)
Collana	Springer Series in Materials Science, , 0933-033X ; ; 289
Disciplina	21.3661
Soggetti	Atomic structure Molecular structure Optical materials Electronic materials Spectroscopy Microscopy Lasers Photonics Atomic/Molecular Structure and Spectra Optical and Electronic Materials Spectroscopy and Microscopy Optics, Lasers, Photonics, Optical Devices Spectroscopy/Spectrometry
Lingua di pubblicazione	Inglese
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Nota di contenuto	Energy level of Free Ions -- Group Theory and Quantum Theory -- Rare Earth Ions in Materials -- Theory of Radiation Transition.-Spectroscopic Parameter and Their Calculation -- Phonon and Spectral Line -- Energy Levels and Spectroscopic Properties of Transition Metal Ions -- Radiationless Transition Inside Ions -- Energy Transfer and Migration Between Ions -- Laser and Physical Properties of Materials -- Composite Function of Laser Crystal -- Apparent Crystal Field model of laser glass and its application -- Appendix -- Index.
Sommario/riassunto	This book discusses the spectral properties of solid-state laser materials, including emission and absorption of light, the law of

radiative and nonradiative transitions, the selection rule for optical transitions, and different calculation methods of the spectral parameters. The book includes a systematic presentation of the authors' own research works in this field, specifically addressing the stimulated nonradiative transition theory and the apparent crystal field model. This volume is helpful resource for researchers and graduate students in the fields of solid spectroscopy and solid-state laser material physics, while also serving as a valuable reference guide for instructors and advanced students of physics.
