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Sommario/riassunto	In recent years the generation of optical harmonics in molecular systems has become an area of increasing interest for a number of reasons. First, many organic crystals and polymeric solids prove not only to have usefully large optical nonlinearities but also to be surprisingly robust and thermally stable. Consequently the fabrication of organic materials for laser frequency conversion has become very much a growth area. At interfaces and in partially ordered systems, harmonic generation is now of considerable scientific interest through the detailed structural information it affords. And in molecular gases and liquids, processes of optical harmonic conversion present a powerful tool for the study of both static and dynamic effects of molecular orientation.; Where the detailed nonlinear optical response of molecules is required, the application of molecular quantum

electrodynamics (QED) brings both rigour and conceptual facility. Using this approach the authors address topics of direct experimental concern in a general formulation of theory for optical harmonics, with a particular focus on quantum optical and molecular aspects. A detailed basis is provided for the applications, enabling the characteristic features of optical nonlinearity to be examined in general terms. A great many of the optical phenomena subsequently addressed find wide application in nonlinear optics and chemical physics. Specifically, the book deals with coherent harmonic generation, both within and at interfaces between different media. It addresses elastic second harmonic (Hyper-Rayleigh) light scattering as well as the inelastic case normally referred to as Hyper-Raman scattering. Full and detailed tables and results are provided for the analysis of experimental observations.