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Altri autori (Persone)	Dao Van Lap
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Nota di bibliografia	Includes bibliographical references (p. [145]-157) and index.
Nota di contenuto	High harmonic generation -- Enhancement of high harmonic generation source -- Influence of driving laser on spectral features of high harmonic generation -- Phase matched high harmonic generation for the study of aligned molecules -- Coherent diffractive imaging using 13.5 nm high harmonic source.
Sommario/riassunto	High order harmonic generation (HHG) produced by the interaction of an intense laser pulse and a gas medium can provide a table top scale coherent radiation source in the short wavelength range from the extreme ultraviolet to the soft x-ray region. This book presents a study based on high order harmonic generation in a semi-infinite gas cell. Two novel schemes are presented which have been used to enhance the quality of the HHG source including the conversion efficiency, the coherence, and the cut-off photon energy. This book focuses on the phase matching of the non-linear conversion process which is the main limitation to the quality of the HHG source. In the first scheme, a combination of lens and axicon is used to create a Bessel Gaussian beam instead of only a Gaussian beam and the presence of a new geometrical phase mismatch term is demonstrated. This allows us to compensate for the phase mismatch and thus to enhance the phase matching condition. In the second scheme, the phase matching is controlled by a means of an off-axis beam. When the phase mismatch is varied, mainly due to a change in the dipole phase term, the

harmonic emission can be destroyed or enhanced. This technique provides the possibility to generate very high harmonic photon energies.
