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Autore	Wei Jingsong
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Nota di contenuto	General methods for obtaining nanoscale light spot -- Third-order nonlinear effects -- Characterization methods for nonlinear absorption and refraction coefficients -- Optical nonlinear absorption and refraction of semiconductor thin films -- Nanoscale spot formation through nonlinear refraction effect -- Optical super-resolution effect through nonlinear saturation absorption -- Resolving improvement by combination of pupil filters and nonlinear thin films -- Applications of nonlinear super-resolution thin films in nano-optical data storage -- Applications of nonlinear super-resolution effect in nanolithography and high resolving light imaging -- Remarkings.

Sommario/riassunto

This book covers many advances in the subjects of nano-optics and nano photonics. The author describes the principle and technical schematics of common methods for breaking through the optical diffraction limit and focuses on realizing optical super-resolution with nonlinear effects of thin film materials. The applications of nonlinear optical super-resolution effects in nano-data storage, nanolithography, and nano-imaging are also presented. This book is useful to graduate students majoring in optics and nano science and also serves as a reference book for academic researchers, engineers, technical professionals in the fields of super-resolution optics and laser techniques, nano-optics and nano photonics, nano-data storage, nano imaging, micro/nanofabrication and nanolithography and nonlinear optics.