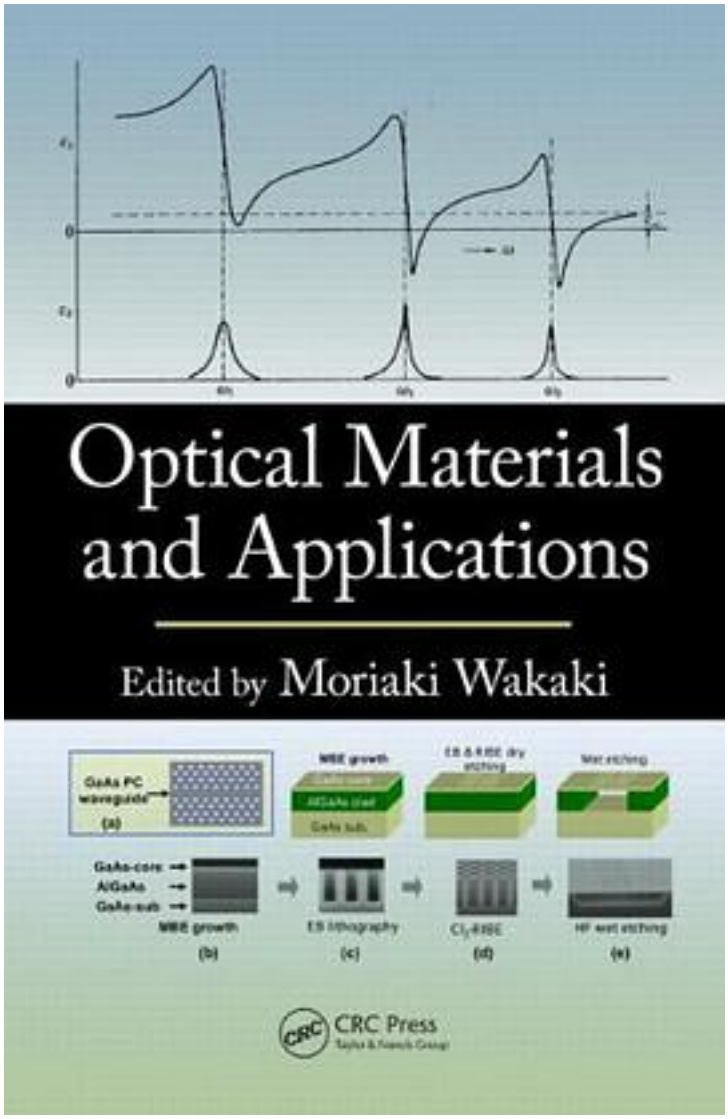
Optical Materials and Applications



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The definition of optical material has expanded in recent years, largely because of IT advances that have led to rapid growth in optoelectronics applications. Helping to explain this evolution, Optical Materials and Applications presents contributions from leading experts who explore the basic concepts of optical materials and the many typical applications in which they are used. An invaluable reference for readers ranging from professionals to technical managers to graduate engineering students, this book covers everything from traditional principles to more cutting-edge topics. It also details recent developmental trends, with a focus on basic optical properties of material. Key topics include: Fundamental optical properties of solids Fundamental optical materials (including thin films) from both linear and nonlinear perspectives Use of bulk materials in the design of various modifications Application of optical thin films in artificial components Formation of artificial structures with sub-wavelength dimensions Use of physical or chemical techniques to control lightwave phase One-, two-, and three-dimensional structures used to control dispersion of materials for nanophotonics Progress of the optical waveguide, which makes optical systems more compact and highly efficient This book carefully balances coverage of theory and application of typical optical materials for ultraviolet, visible and infrared, non-linear optics, solid state lasers, optical waveguides, optical thin films and nanophotonics. It addresses both basic ideas and more advanced topics, making it an equally invaluable resource for beginners and active researchers in this growing field.

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