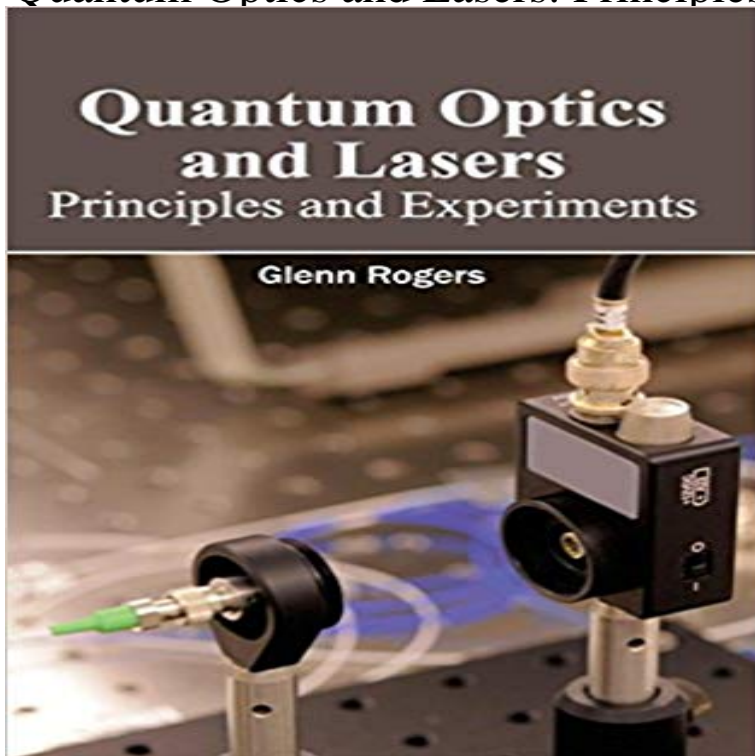


## Quantum Optics and Lasers: Principles and Experiments



This book covers a wide spectrum of complications and principles related to the concepts of Quantum Optics and Laser Experiments. These dynamically growing branches of physics are of extreme importance both for theoretical comprehension of the quantum nature of optical phenomena as well as its practical applications. The book consists of theoretical contributions related to such problems like a general method to elucidate electromagnetic field states with correlation functions of distinct nature, photon localization, mathematical setup required for field state rebuilding on the basis of limited set of observables, non-classical characteristics of some superpositions of field states in time-varying media, and quantum electrodynamics procedures in powerful fields provided by pulsed laser beams. Experimental contributions have been discussed regarding few quantum optics processes in photonic crystals - media with spatially adjusted dielectric properties - as well as topics regarding the creation of cloud of cold atoms in magneto optical trap. The book provides the readers with the requisite general knowledge of the phenomena under discussion and well-explained mathematical calculations.

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