Record Nr. UNINA9911020066403321 Autore Inamuddin Titolo Quantum Optics Devices on a Chip Pubbl/distr/stampa Newark:,: John Wiley & Sons, Incorporated,, 2025 ©2025 **ISBN** 1-394-24860-1 1-394-24859-8 Edizione [1st ed.] Descrizione fisica 1 online resource (0 pages) Altri autori (Persone) AltalhiTariq AlshehriNaif Ahmed CruzJorddy Neves 535/.2 Disciplina Soggetti Quantum optics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia

Sommario/riassunto

Quantum Optics Devices on a Chip provides a comprehensive understanding of how the integration of advanced quantum technologies and photonics is revolutionizing multiple industries, making it essential for anyone interested in the future of quantum innovation. Quantum Optics Devices on a Chip is situated at the intersection of several disciplines and industries, driving advancements in quantum technology and integrated photonics. The development of quantum optics devices on a chip represents a significant breakthrough. Chip-scale integration involves designing and fabricating optical devices, such as waveguides, modulators, detectors, and light sources, on a micro- or nanoscale chip. This miniaturization enables the integration of multiple components on a single chip. leading to compact, efficient, and scalable quantum optical systems. Quantum sensing applications, such as magnetometry, gyroscopy, and biosensing, can benefit from miniaturized, high-performance devices integrated on a chip, allowing for the seamless integration of quantum optical functionalities with existing photonic circuits. This integration holds promise for applications in telecommunications, data communication, and optical signal processing. Overall, the

development of quantum optics devices on a chip represents a significant step forward in the advancement of quantum technology. It brings together principles from physics, materials science, engineering, and computer science to enable the practical implementation of quantum phenomena for a wide range of applications across industries. Quantum Optics Devices on a Chip serves as a comprehensive guide to this rapidly evolving field, providing insights and knowledge, exploring the contributions it has made to the disciplinary and industrial development of quantum optics devices on a chip.