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Sommario/riassunto	This book deals with a new class of materials, quantum rings. Innovative recent advances in experimental and theoretical physics of quantum rings are based on the most advanced state-of-the-art fabrication and characterization techniques as well as theoretical methods. The experimental efforts allow to obtain a new class of semiconductor quantum rings formed by capping self-organized quantum dots grown by molecular beam epitaxy. Novel optical and magnetic properties of quantum rings are associated with non-trivial topologies at the nanoscale. An adequate characterization of quantum rings is possible on the basis of modern characterization methods of nanostructures, such as Scanning Tunneling Microscopy. A high level of complexity is demonstrated to be needed for a dedicated theoretical model to adequately represent the specific features of quantum rings. The findings presented in this book contribute to develop low-cost high-performance electronic, spintronic, optoelectronic and information processing devices based on quantum rings. .