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Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Preface -- Chapter 1 SuperResolution Microscopy (SRM): Brief Introduction -- 1.1 Optical Microscopy -- 1.1.1 History and Background -- 1.2 Specialized Optical Microscopes -- 1.2.1 Inverted Microscopes -- 1.2.2 Confocal Microscopes -- 1.3 Optical Diffraction Limit -- 1.4 Super Resolution Microscopy: Overcoming the Diffraction Limit -- 1.5 Near Field Scanning Optical Microscopy -- 1.6 FarField SuperResolution Microscopy -- 1.7 Fluorescent Probes for SuperResolution Microscopy -- 1.8 Image Analysis Algorithms -- 1.9 Applications -- 1.10 Outline of the Content of Succeeding Chapters -- Acknowledgment -- References -- Chapter 2 Point Spread Function Engineering SRM -- 2.1 Stimulated Emission Depletion Microscopy (STED) -- 2.1.1 Principles of STED -- 2.1.2 ThreeDimensional STED -- 2.1.3 MultiColor and MultiPhoton STED -- 2.1.4 Strategies to Reduce STED Power -- 2.1.4.1 TimeGated STED Technology -- 2.1.4.2 Offline Gated STED Technology -- 2.1.4.3 PhasorPlot Analysis of STEDFLIM
Sommario/riassunto	This book, edited by Junle Qu and Zhigang Yang, provides a comprehensive exploration of super-resolution optical imaging and

microscopy. It covers various methods, algorithms, and applications in the field, emphasizing the significance of these technologies in biological research. The book includes discussions on point spread function engineering, single molecule localization microscopy, fluorescence imaging, structured illumination microscopy, and the role of deep learning in microscopy. It also delves into the development of fluorescent materials and the historical evolution of optical microscopes. The intended audience includes researchers and professionals in biomedical photonics and related fields.