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Titolo	Microtechnology for cell manipulation and sorting // edited by Wonhee Lee, Peter Tseng, Dino Di Carlo
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Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (IX, 281 p. 120 illus., 114 illus. in color.)
Collana	Microsystems and Nanosystems, , 2198-0063
Disciplina	610.28
Soggetti	Nanotechnology Biomedical engineering Biochemical engineering Biophysics Biological physics Biotechnology Cell biology Nanotechnology and Microengineering Biomedical Engineering and Bioengineering Biochemical Engineering Biological and Medical Physics, Biophysics Microengineering Cell Biology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Microfluidic Cell Sorting and Separation Technology -- Magnetic Cell Manipulation and Sorting -- Electrical Manipulation and Sorting -- Optical Manipulation of Cells -- Acoustic Cell Manipulation -- Gravity-Driven Fluid Pumping and Cell Manipulation -- Inertial Microfluidic Cell Separation -- Microfluidic Technologies for Deformability Based Cell Sorting -- Microfluidic Aqueous Two-Phase Systems.
Sommario/riassunto	This book delves into the recent developments in the microscale and microfluidic technologies that allow manipulation at the single and cell

aggregate level. Expert authors review the dominant mechanisms that manipulate and sort biological structures, making this a state-of-the-art overview of conventional cell sorting techniques, the principles of microfluidics, and of microfluidic devices. All chapters highlight the benefits and drawbacks of each technique they discuss, which include magnetic, electrical, optical, acoustic, gravity/sedimentation, inertial, deformability, and aqueous two-phase systems as the dominant mechanisms utilized by microfluidic devices to handle biological samples. Each chapter explains the physics of the mechanism at work, and reviews common geometries and devices to help readers decide the type of style of device required for various applications. This book is appropriate for graduate-level biomedical engineering and analytical chemistry students, as well as engineers and scientists working in the biotechnology industry.
