Record Nr. UNINA9910410652803321 Microfluidics and nanofluidics handbook: fabrication, implementation, **Titolo** and applications / / edited by Sushanta K. Mitra, Suman Chakraborty Pubbl/distr/stampa Boca Raton, Fla.:,: CRC Press,, 2012 **ISBN** 1-000-21868-6 0-429-09337-3 1-283-35002-5 9786613350022 1-4398-1673-5 Edizione [First edition.] Descrizione fisica 1 online resource (622 p.) Classificazione SCI024000SCI055000TEC009070 Altri autori (Persone) MitraSushanta K ChakrabortySuman <1973-> Disciplina 532.05 620.106 Microfluidic devices - Design and construction Soggetti Microfluidics Nanofluids Lingua di pubblicazione Inglese **Formato** Materiale a stampa Monografia Livello bibliografico Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Front Cover; Contents; Preface; Editors; Contributors; Chapter 1: Image-Based Photonic Techniques for Microfluidics; Chapter 2: Recent Developments in Microparticle Image Velocimetry; Chapter 3: Near-Surface Particle-Tracking Velocimetry; Chapter 4: Finite-Volume Method for Numerical Simulation: Fundamentals; Chapter 5: Level-Set Method for Microscale Flows; Chapter 6: Characterization of Chaotic Stirring and Mixing Using Numerical Tools; Chapter 7: Lattice Boltzmann Method and Its Applications in Microfluidics; Chapter 9: System Integration in Microfluidics Chapter 10: Fluidic Interconnects for Microfluidics: Chip to Chip and World to ChipChapter 11: Micro Total Analysis Systems; Chapter 12: Microparticle and Nanoparticle Manipulation; Chapter 13: Optoelectric Particle Manipulation: Chapter 14: Microfluidic Particle Counting

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Sommario/riassunto

This comprehensive handbook presents fundamental aspects, fabrication techniques, introductory materials on microbiology and chemistry, measurement techniques, and applications of microfluidics and nanofluidics. The second volume focuses on topics related to experimental and numerical methods. It also covers fabrications and applications in a variety of areas, from aerospace to biological systems. Reflecting the inherent nature of microfluidics and nanofluidics, the book includes as much interdisciplinary knowledge as possible. It provides the fundamental science background for newcomers and advanced techniques and concepts for experienced researchers and professionals--