1. Record Nr. UNINA9910784142203321

Autore	Nguyen Nam-Trung <1970->
Titolo	Fundamentals and applications of microfluidics / / Nam-Trung Nguyen, Steven T. Wereley
Pubbl/distr/stampa	Boston : , : Artech House, , ©2006 [Piscataqay, New Jersey] : , : IEEE Xplore, , [2006]
ISBN	1-58053-973-4
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (512 p.)
Collana	Artech House integrated microsystems series
Altri autori (Persone)	WereleySteven T
Disciplina	620.1/06
Soggetti	Fluidic devices Microfluidics Microelectromechanical systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Fundamentals and Applications of Microfluidics; Contents v; Preface xi; Acknowledgments xiii; Chapter 1 Introduction 1; Chapter 2 Fluid Mechanics Theory 11; Chapter 3 Fabrication Techniques for Microfluidics 55; Chapter 4 Experimental Flow Characterization 117; Chapter 5 Microfluidics for External Flow Control 177; Chapter 6 Microfluidics for Internal Flow Control: Microvalves 211; Chapter 7 Microfluidics for Internal Flow Control: Micropumps 255; Chapter 8 Microfluidics for Internal Flow Control: Microflow Sensors 311; Chapter 9 Microfluidics for Life Sciences and Chemistry: Microneedles 339.
Sommario/riassunto	Updating the Artech House bestseller, Fundamentals and Applications of Microfluidics, this newly revised second edition provides you with complete and current coverage of this cutting-edge field. The second edition offers a greatly expanded treatment of nanotechnology, featuring new material on nanoparticle suspensions, nanoscale experimental techniques, carbon nanotubes, DNA, and virus detection. You also find more in-depth discussions on electrokinetics and flow theory. The book shows you how to take advantage of the performance benefits of microfluidics and serves as your instant reference for state-of-the-art microfluidics technology and applications. The wide range of applications discussed include fluid control devices, gas and fluid

measurement devices, medical testing equipment, and implantable drug pumps. You find practical guidance in choosing the best fabrication and enabling technology for a specific microfluidic application, and learn how to design a microfluidic device. Moreover, you get simple calculations, ready-to-use data tables, and rules of thumb that help you make design decisions and determine device characteristics quickly.