

1. Record Nr.	UNINA9910460580203321
Autore	Madou Marc J.
Titolo	From MEMS to bio-MEMS and bio-NEMS manufacturing techniques and applications // by Marc J. Madou
Pubbl/distr/stampa	Boca Raton, FL : , : CRC Press, an imprint of Taylor and Francis, , 2011
ISBN	0-429-10921-0 1-4200-5518-6 1-4398-9524-4
Edizione	[Third edition.]
Descrizione fisica	1 online resource (642 p.)
Disciplina	620.5
Soggetti	Microelectromechanical systems Nanoelectromechanical systems Microfluidics Solid state physics Electronic books.
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 at the end of each chapters.
Nota di contenuto	Front Cover; Contents; Roadmap; Author; Acknowledgments; Chapter 1: Nonlithography-Based (Traditional) and Lithography-Based (Nontraditional) Manufacturing Compared; Chapter 2: Nature as an Engineering Guide: Biomimetics; Chapter 3: Nanotechnology: Top-Down and Bottom-Up Manufacturing Approaches Compared; Chapter 4: Packaging, Assembly, and Self-Assembly; Chapter 5: Selected Materials and Processes for MEMS and NEMS; Chapter 6: Metrology and MEMS/NEMS Modeling; Chapter 7: Scaling Laws; Chapter 8: Actuators; Chapter 9: Power and Brains in Miniature Devices Chapter 10: MEMS and NEMS ApplicationsBack Cover
Sommario/riassunto	From MEMS to Bio-MEMS and Bio-NEMS: Manufacturing Techniques and Applications details manufacturing techniques applicable to bionanotechnology. After reviewing MEMS techniques, materials, and modeling, the author covers nanofabrication, genetically engineered proteins, artificial cells, nanochemistry, and self-assembly. He also discusses scaling laws in MEMS and NEMS, actuators, fluidics, and power and brains in miniature devices. He concludes with coverage of

various MEMS and NEMS applications. Fully illustrated in color, the text contains end-of-chapter problems, worked examples, extensive references for further reading, and an extensive glossary of terms.
