

1. Record Nr.	UNINA9910825461903321
Autore	Paik Philip Y.
Titolo	Adaptive cooling of integrated circuits using digital microfluidics // Philip Y. Paik, Krishnendu Chakrabarty, Vamsee K. Pamula
Pubbl/distr/stampa	Norwood, Massachusetts : , : Artech House, , ©2007 [Piscataway, New Jersey] : , : IEEE Xplore, , [2007]
ISBN	1-59693-139-6
Descrizione fisica	1 online resource (203 p.)
Collana	Artech House integrated microsystems series
Altri autori (Persone)	ChakrabartyKrishnendu PamulaVamsee K
Disciplina	620.106 621.3815
Soggetti	Integrated circuits - Cooling Integrated circuits - Design and construction Microfluidics
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	Adaptive Cooling of Integrated Circuits Using Digital Microfluidics; Contents 5; Preface 11; Chapter 1 Thermal Management of Integrated Circuits 15; Chapter 2 Cooling Devices for Integrated Circuits 33; Chapter 3 Adaptive Hot-Spot Cooling Principles and Design 49; Chapter 4 Technology Development 77; Chapter 5 Thermal Effects of Digital Microfluidic Devices 105; Chapter 6 Flow-Through-Based Adaptive Cooling 117; Chapter 7 Programmable Thermal Switch-Based Adaptive Cooling 145; Chapter 8 Concluding Remarks 161; Appendix A Image Analysis Software Using MATLAB 167.
Sommario/riassunto	Thanks to increasing power consumption and component density, localized hot spots are becoming a serious challenge in IC (integrated circuit) chip design so serious, in fact, that Intel recently had to yank a circuit because it was literally burning. For IC engineers grappling with high power dissipation and thermal issues, new droplet-based cooling techniques using digital microfluidics technology could provide the solution. This definitive guide paves the way, with design and implementation methodologies and prototypes for utilizing this groundbreaking technology. After reviewing cooling.

