

1. Record Nr.	UNINA9910135026603321
Titolo	Future trends in microelectronics : Journey into the unknown // edited by Serge Luryi, Jimmy Xu, Alexander Zaslavsky
Pubbl/distr/stampa	Hoboken, New Jersey : , : IEEE Press : , : Wiley, , 2016 ©2016
ISBN	1-119-06918-1 1-119-06917-3 1-119-06922-X
Descrizione fisica	1 online resource (383 p.)
Disciplina	621.381
Soggetti	Microelectronics - Technological innovations Nanotechnology - Technological innovations Semiconductors - Technological innovations
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 and index.
Nota di contenuto	Cover ; Title Page ; Copyright ; Contents ; List of Contributors ; Preface ; Acknowledgments ; Part I Future of Digital Silicon; 1.1 Prospects of Future Si Technologies in the Data-Driven World; 1. Introduction ; 2. Memory - DRAM ; 3. Memory - NAND ; 4. Logic technology ; 5. CMOS image sensors ; 6. Packaging technology 7. Silicon photonics technology 8. Concluding remarks ; Acknowledgments ; References ; 1.2 How Lithography Enables Moore's Law; 1. Introduction ; 2. Moore's Law and the contribution of lithography ; 3. Lithography technology: past and present ; 4. Lithography technology: future ; 5. Summary 6. Conclusion Acknowledgments ; References ; 1.3 What Happened to Post-CMOS?; 1. Introduction ; 2. General constraints on speed and energy

; 3. Guidelines for success ; 4. Benchmarking and examples ; 5. Discussion ; 6. Conclusion ; Acknowledgments ; References

1.4 Three-Dimensional Integration of Ge and Two-Dimensional Materials for One-Dimensional Devices1. Introduction ; 2. FEOL technology and materials for 3D integration ; 3. Integration of "more than Moore" functionality ; 4. Implications of 3D integration at the system level ; 5. Conclusion ; Acknowledgments ; References

1.5 Challenges to Ultralow-Power Semiconductor Device Operation1. Introduction ; 2. Ultimate MOS transistors ; 3. Small slope switches ; 4. Conclusion ; Acknowledgments ; References ; 1.6 A Universal Nonvolatile Processing Environment; 1. Introduction ; 2. Universal nonvolatile processing environment 3. Bias-field-free spin-torque oscillator
