

# Contents

Preface .....	v
1. A Hybrid Route from CMOS to Nano and Molecular Electronics . . . . <i>G. F. Cerofolini and D. Mascolo</i>	1
2. From SOI Basics to Nano-Size MOSFETs .....	67
<i>Sorin Cristoloveanu</i>	
3. Strategies of Nanoscale Semiconductor Lasers .....	105
<i>Samuel S. Mao</i>	
4. Silicon Nanocrystal Nonvolatile Memory .....	171
<i>R. A. Rao, M. A. Sadd, R. F. Steimle, C. T. Swift, H. Gasquet, and M. Stoker</i>	
5. Novel Dielectric Materials for Future Transistor Generations .....	199
<i>Gennadi Bersuker, Byoung H. Lee, Anatoli Korkin, and Howard R. Huff</i>	
6. Scanning Force Microscopies for Imaging and Characterization of Nanostructured Materials .....	223
<i>Bartosz Such, Franciszek Krok, and Marek Szymonski</i>	
7. Simulation of Nano-CMOS Devices: From Atoms to Architecture . . . .	257
<i>A. Asenov, A.R. Brown, B. Cheng, J.R. Watling, G. Roy and C. Alexander</i>	
8. Lattice Polarons and Switching in Molecular Nanowires and Quantum Dots .....	305
<i>A.S. Alexandrov</i>	
Index .....	357