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                      Processors / / by Hans Reyserhove, Wim Dehaene

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   Descrizione fisica 1 online resource (227 pages)

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   Soggetti   Electronic circuits
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                      Electronics
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   Livello bibliografico Monografia

   Nota di bibliografia Includes bibliographical references and index.

   Nota di contenuto Chapter 1. Energy-Efficient Processors: Challenges and Solutions --
                      Chapter 2. Near-Threshold Operation: Technology, Building Blocks and
                      Architecture -- Chapter 3. Efficient VLSI Design Flow -- Chapter 4.
                      Ultra-Low Voltage Microcontrollers -- Chapter 5. Error Detection and
                      Correction -- Chapter 6. Timing Error-Aware Microcontroller --
                      Chapter 7. Conclusion.

   Sommario/riassunto This book enables readers to achieve ultra-low energy digital system
                      performance. The author's main focus is the energy consumption of
                      microcontroller architectures in digital (sub)-systems. The book covers
                      a broad range of topics extensively: from circuits through design
                      strategy to system architectures. The result is a set of techniques and a
                      context to realize minimum energy digital systems. Several prototype
                      silicon implementations are discussed, which put the proposed
                      techniques to the test. The achieved results demonstrate an

extraordinary combination of variation-resilience, high speed performance and ultra-low energy. Presents a full bottom-up micro-electronics approach: circuit-level, design strategy and CAD automation, architecture optimization Motivates discussion with simulation results and/or measurements in an advanced nanometer CMOS process Compares traditional circuit/design/architecture techniques and state-of-the-art, setting the landscape of current best performance and how it can be improved.