The power consumption of integrated circuits is one of the most problematic considerations affecting the design of high-performance chips and portable devices. The study of power-saving design methodologies now must also include subjects such as systems on chips, embedded software, and the future of microelectronics. **Low-Power Electronics Design** covers all major aspects of low-power design of ICs in deep submicron technologies, and addresses emerging topics related to future design.

This volume explores, in individual chapters written by expert authors, the many low-power techniques born during the past decade. It also discusses the many different domains and disciplines that impact power consumption, including processors, complex circuits, software, CAD tools, and energy sources and management.

The authors delve into what many specialists predict about the future by presenting techniques that are promising but are not yet reality. They investigate nanotechnologies, optical circuits, ad hoc networks, e-textiles, as well as human powered sources of energy. **Low-Power Electronics Design** delivers a complete picture of today’s methods for reducing power, and also illustrates the advances in chip design that may be commonplace 10 or 15 years from now.

**FEATURES**

- Covers all major aspects of low-power design of ICs in deep submicron technologies
- Explores the history and ongoing evolution of low-power electronics
- Describes the components of low-power circuits, such as logic circuits and standard cells, arithmetic operators, adiabatic and clock-powered circuits, and more
- Examines battery cells, sources of energy, and chip cooling
- Addresses emerging topics related to future design, including nanotechnologies, optical chips, systems on chips, embedded software, and energy sources
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