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	Collana	Artech House series smart materials, structures, and systems
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	Nota di contenuto	Energy Harvesting for Autonomous Systems; Contents; Chapter 1 Introduction; 1.1 Background and Motivation; 1.2 Typical System Architecture; 1.3 Intended Readership for This Book; Reference; Chapter 2 Wireless Devices and Sensor Networks; 2.1 Introduction; 2.2 Energy Requirements of Autonomous Devices; 2.2.1 From Mobile Phones to MP3 Players; 2.2.2 Radio Frequency Identification (RFID); 2.2.3 Wireless Sensor Networks; 2.3 Enabling Technologies: Devices and Peripherals; 2.3.1 Low-Power Microcontrollers and Transceivers; 2.3.2 Sensors, Peripherals, and Interfaces; 2.4 Wireless Communication. 2.4.1 Communication Protocols and Power Requirements2.4.2 Energy-Aware Communication Protocols; 2.5 Energy-Awareness in Embedded Software; 2.5.1 Operating Systems and Software Architectures; 2.6 Alternative Nonrenewable Power Sources; 2.6.1 Direct Transmission; 2.7 Discussion; References; Chapter 3 Photovoltaic Energy Harvesting; 3.1 Introduction; 3.2 Background; 3.2.1 Semiconductor Basics; 3.3 Solar Cell Characteristics; 3.4 Module Characteristics; 3.5 Irradiance

Sommario/riassunto	This unique resource provides a detailed understanding of the options for harvesting energy from localized, renewable sources to supply power to autonomous wireless systems. You are introduced to a variety of types of autonomous system and wireless networks and discover the capabilities of existing battery-based solutions, RF solutions, and fuel cells. The book focuses on the most promising harvesting techniques, including solar, kinetic, and thermal energy. You also learn the implications of the energy harvesting techniques on the design of the power management electronics in a system. This i.