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Descrizione fisica	1 online resource (216 pages) : illustrations, charts, photographs
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Soggetti	Sustainable buildings Sustainable architecture Energy harvesting
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Nota di contenuto	Applications of Energy Harvesting Technologies in Buildings; Contents; 1 Introduction; 1.1 Background and Motivation; 1.2 Home and Building Automation ; 1.2.1 Wireless BAS; 1.2.2 Wireless Home Automation ; 1.3 The Scope of the Book; References; 2 Energy Harvesting in the Built Environments; 2.1 Introduction; 2.2 Energy-Harvesting Sources in Built Environments; 2.2.1 Energy Harvesting from Light Sources; 2.2.2 Energy Harvesting from Thermal Sources; 2.2.3 Energy Harvesting from Periodic Kinetic Sources; 2.2.4 Energy Harvesting from Intermittent Kinetic Sources 2.2.5 Energy Harvesting from Electromagnetic Waves2.2.6 Energy Harvesting from Inductive Power Transfer; 2.2.7 Energy Harvesting from Airflow; 2.2.8 Hybrid Energy Harvesting; 2.2.9 Summary of Energy Levels in Built Environments; 2.3 Empirical Energy Measurements in the Built Environments; 2.3.1 Energy Levels in Residential and Commercial Buildings; 2.3.2 Comparison of Power Levels Reported in the Literature and Those Obtained Imperially; 2.4 Energy-Harvesting Sources on the Human Body; 2.5 Conclusions; References 3 Solar Cell-Powered Sensor Node for Emotion Monitoring Systems in Ambient-Assisted Living Environment3.1 Introduction; 3.1.1 Overview

Sommario/riassunto

This timely new resource explores the available energy sources within commercial and residential buildings and the available technologies for energy harvesting. Energy harvesting within built environments is presented using strong research and commercial examples. This book includes clear and concise case studies on solar cell powered sensor nodes for emotion monitoring systems in ambient assistive living environments and inductive/RF power transfers. Thermoelectric energy harvesting and power management circuit design, airflow and vibration energy harvesting is also explored. The book concludes with a look at the future of energy harvesting in buildings.