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Nota di contenuto	Chapter 1. Energy's current state -- Chapter 2.Conceptual Framework -- Chapter 3.BIPVS basics for design, sizing, monitoring and Power quality measurement and assessment -- Chapter 4.Integrated photovoltaic system sizing and economic evaluation using RETScreen™ for a building of 40 apartments -- Chapter 5. BIPVS sizing and Implementation at the Universidad de Bogota Jorge Tadeo Lozano -- Chapter 6.Method for Calculating Quantum Efficiency and Spectral Response of Solar Cells Using LabVIEW -- Chapter 7. PV generator Characterization -- Chapter 8.Implementation of the BIPVS monitoring system -- Chapter 9.Performance - Behavior and Analysis of BIPVS -- Chapter 10.Behavior and analysis of the power system in steady state -- Chapter 11.Application of neural networks to validate the power generation of BIPVS -- Chapter 12.Study and analysis of BIPVS with

RETScreen.

Sommario/riassunto

This book discusses building-integrated photovoltaic systems (BIPV) and provides solutions for solving problems related to designing, sizing and monitoring a BIPV that has been used to replace conventional building materials in parts of the building envelope such as the roof, skylights or facades. The book begins by introducing the basics to readers interested in learning about this technology and then outlines in an accessible way, a practical development plan for the installation and monitoring of these systems in residential, industrial, and commercial buildings. Chapters discuss the needs of installing, designing, and sizing and provide a financial analysis for a successful implementation of a BIPV system. This book is a useful tool for renewable energy designers, energy contractors, architects, government institutions, and those in the academic community who are interested in seamlessly integrating solar panels into the construction phase of new building projects or retrofitted into existing buildings.