

1. Record Nr.	UNINA9910357824903321
Titolo	Nanostructured Materials for Next-Generation Energy Storage and Conversion [[electronic resource]] : Photovoltaic and Solar Energy // edited by Tulay Aygan Atesin, Sajid Bashir, Jingbo Louise Liu
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2019
ISBN	3-662-59594-X
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XLV, 501 p. 208 illus., 166 illus. in color.)
Disciplina	620.115
Soggetti	Nanotechnology Nanochemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Solar Energy: Potential and Toxicology -- First Principles Simulations for CuInGaSe ₂ (CIGS) Solar Cells -- Design of Photovoltaics Based Manufacturing System Using Computer-Aided Design -- Solar Energy Harvesting by Perfect Absorbers Made of Natural Hyperbolic Material -- Strategies for Improving Solar Energy Conversion: Nanostructured Materials and Processing Techniques -- The Recent Research and Growth in Energy Efficiency in Cu ₂ ZnSnS ₄ (CZTS) Solar Cells -- Counter Electrode Materials for Organic-Inorganic Perovskite Solar Cells -- Impact of Electron Transport Layers (ETLs) and Hole Transport Layer (HTLs) on Perovskite Solar Cells Performance -- Thermal Management Techniques for Concentrating Photovoltaic Modules -- Thermal Energy Storage Systems Based on Metal Hydride Materials -- Advanced Coupling of Energy Storage and Photovoltaics -- Design, Engineering, and Evaluation of Porphyrins for Dye-Sensitized Solar Cells -- Insights into the Application of Metal-Organic Frameworks for Molecular Photovoltaics -- Industry-Specific Utilization of Solar Industrial Process Heat (SHIP) -- Comparative Analysis of Water Quality of Different Types of Feed Water in Solar Energy Based Desalting System -- Postface: China in the New Policies Scenario.
Sommario/riassunto	Nanostructured Materials for Next-Generation Energy Storage and Conversion: Photovoltaic and Solar Energy, is volume 4 of a 4-volume

series on sustainable energy. Photovoltaic and Solar Energy while being a comprehensive reference work, is written with minimal jargon related to various aspects of solar energy and energy policies. It is authored by leading experts in the field, and lays out theory, practice, and simulation studies related to solar energy and allied applications including policy, economic and technological challenges. Topics covered include: introduction to solar energy, fundamentals of solar radiation, heat transfer, thermal collection and conversion, solar economy, heating, cooling, dehumidification systems, power and process heat, solar power conversion, policy and applications pertinent to solar energy as viable alternatives to fossil fuels. The aim of the book is to present all the information necessary for the design and analysis of solar energy systems for engineers, material scientists, economics, policy analysts, graduate students, senior undergraduates, solar energy practitioner, as well as policy or lawmakers in the field of energy policy, international energy trade, and libraries which house technical handbooks related to energy, energy policy and applications.
