1. Record Nr. UNINA9910350283903321

Titolo	Advances in Solar Energy Research [[electronic resource] /] / edited by Himanshu Tyagi, Avinash Kumar Agarwal, Prodyut R. Chakraborty, Satvasheel Powar
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2019
ISBN	981-13-3302-5
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (xx, 592 pages) : illustrations
Collana	Energy, Environment, and Sustainability, , 2522-8366
Disciplina	621.47
Soggetti	Renewable energy resources Materials science Force and energy Energy storage Renewable and Green Energy Energy Materials Energy Storage
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Natural Dye–Sensitized Solar Cells- Fabrication, Characterization, and Challenges -- Concentrated Photovoltaic (CPV) for Rooftop – Compact System Approach -- Solar Radiation Assessment and Forecasting Using Satellite Data and Radiative Transfer Models -- Advances in Solar Energy: Solar Cells and Their Applications -- Metal organic frameworks in dye sensitized solar cells -- Current Trends and Future Roadmap for Solar Fuels -- Molecular Optimization for Fullerene-free Organic Solar Cells -- Low-GWP refrigerants for energy conservation and environmental sustainability -- Quasi-Steady State Reduced Order Model for Two-Phase Flows in Solar-Thermal Heat Exchanger -- Transient Simulation of Full-Scale Manzanares, Spain Solar Updraft Power Plant -- Thermal Performance of Multistage Flash Desalination System Coupled With Nanofluid-Based Direct Absorption Solar Collector -- Novel Parabolic Trough Receiver Design for Purification of Sewage Water -- Review and Analysis of Shell and Tube type Latent Heat Thermal Energy Storage Device -- Dye-Sensitized Solar Cells as

Potential Candidate for Indoor/Diffused Light Harvesting Applications: from BIPV to Self-Powered IoTs -- On the Use of Origami for Solar Energy Harvesting -- A Primer on the manufacturing process of Si Solar Cells and advances therein -- Techno-Economic Potential of Large-Scale Solar Deployment in the US -- Solar Assisted Gasification -- Solar Thermal Powered Bakery Oven -- On the Estimation of Concentrated Solar Irradiance with a Low-temperature Radiation Calorimeter -- Supercritical Carbon dioxide Solar Thermal Technology -- Solar Drying of Agricultural products- System design, testing and economic analysis.

Sommario/riassunto

This book covers major technological advancements in, and evolving applications of, thermal and photovoltaic solar energy systems. Advances in technologies for harnessing solar energy are extensively discussed, with topics including the fabrication, compaction and optimization of energy grids, solar cells and panels. Leading international experts discuss the applications, challenges and future prospects of research in this increasingly vital field, providing a valuable resource for all researchers working in this field.