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Nota di contenuto	Intro -- Solar Collectors: Energy Conservation, Design and Applications -- Contents -- Preface -- Modeling and Control of Concentrating Solar Power Systems: A Discrete-Time Adaptive Scheme for Temperature Control in Molten Salt Solar Collectors Fields -- Abstract -- 1. Introduction -- 2. Concentrating Solar Plants -- 3. Temperature Control -- 4. Conclusion -- References -- Simulation of Active Solar Space Heating and Domestic Hot Water Preparation in a Passive House -- Abstract -- 1. Introduction -- 2. Building Models -- 3. The Active Heating System -- 4. Results and Discussions -- 5. Conclusion -- Acknowledgments -- References -- Solar Air Heaters, Applications and Design Configurations -- Abstract -- Introduction -- The Thermal Performance of the Solar Air Heater -- The Theoretical Analysis -- Design Configuration of Solar Air Heater -- Performance Enhancement of the Solar Air Heater -- Applications of Solar Air Heaters -- Conclusions -- Nomenclature -- References -- The Solar Air Shutter: A New System for Space Heating -- Abstract -- Introduction -- 1. Energy Situation -- 2. Brief Review of Solar Air Heaters -- 3. Presentation of the Solar Air Shutter -- 4. First Experimental Results of the Solar Air Shutter -- 5. First Stage of the Thermal Modelling of the Shutter -- Conclusion -- References -- Thermal Performance of a Two-Phase Closed Thermosyphon Solar System Using Different Working Fluids -- Abstract -- 1. Introduction -- 2. Experiment -- 3. Experimental Results -- Conclusion -- Acknowledgements -- References -- Solar

Evaporator-Collectors: Analyses and Applications -- Abstract -- 1. Introduction -- 2. Analyses of SEC -- 3. SEC for Water Heating -- 4. SEC for Drying -- 5. Integrated System of SEC -- 6. SEC for Desalination -- Conclusion -- Nomenclature -- Reference.

The Design of New Configurable Solar Roofs: Toward a New Paradigm for Sustainable Buildings -- Abstract -- 1. The Creative Process and New Technology -- 2. Brief Discussion of Perspectives for Solar Technologies -- 3. The Evolution of the Classic Roof -- 4. Previous Designs of Configurable Roofs -- 5. A the New Design of a Configurable Solar Roof -- 6. A New Design of Configurable Solar Awning -- 7. Next Developments in the Configurable Design -- 8. Conclusions and Final Remarks -- Acknowledgments -- References --

The Solar Collector and Near Earth Object Diversion -- Abstract -- Introduction: Extraterrestrial Solar Collectors -- The NEO Threat -- NEO Deflection Alternatives -- Modeling the Solar Collector -- Conclusions: Issues and Applications -- References -- The Importance and Effect of Configurational Geometry in the Design and Application of Solar Collectors and Concentrators -- Abstract -- Introduction -- General Considerations -- Experiment -- Results -- Discussion -- Conclusion -- Acknowledgement -- References --

CPV Optics: Optical Design and Tests -- Abstract -- Introduction -- 1. Optical Design -- 2. Realisation -- 3. Optical Tests -- References --

Structural Optimization Design and Radiation Performance Simulation in a Dish Solar Collector System -- Abstract -- 1. Introduction -- 2. Methodology -- 3. Effects of Influential Factors on Focal Flux -- 4. Simulation of Radiation Characteristics -- 5. A Measurement System for Focal Flux of a Dish Concentrator -- 6. Structural Optimization Design -- 7. Conclusion -- Acknowledgements -- References --

A Solar Crop Drying System with Roof-Integrated Solar Collectors: Experimental and Modelling Performance -- Abstract -- 1. Introduction -- 2. Description of the Drying System with Roof-Integrated SolarAir Heater -- 3. Experimental Investigation of the Performance of the DryingSystem -- 4. Modelling. 5. Results and Discussion -- 6. Conclusion -- Acknowledgements -- Nomenclature -- References -- Index.

Sommario/riassunto

A solar collector is a device for extracting the energy of the sun directly into a more usable or storable form. The energy in sunlight is in the form of electromagnetic radiation from the infrared (long) to the ultraviolet (short) wavelengths. The solar energy striking the earth's surface at any one time depends on weather conditions, as well as location and orientation of the surface, but overall, it averages about 1000 watts per square meter on a clear day with the surface directly perpendicular to the sun's rays. Solar collectors are the key component of active solar-heating systems. Solar collectors gather the sun's energy, transform its radiation into heat, then transfer that heat to water, solar fluid, or air. The solar thermal energy can be used in solar water-heating systems, solar pool heaters, and solar space-heating systems. There are several types of solar collectors: Flat-plate collectors, Evacuated-tube collectors and Integral collector-storage systems.