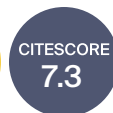# energies

Special Issue Reprint

Advances in Solar Thermal Energy Harvesting, Storage and Conversion

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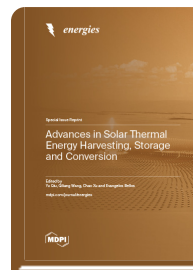Yu Qiu
Qiliang Wang
Chao Xu
Evangelos Bellos

This Special Issue showcases advancements in solar thermal energy technologies through interdisciplinary research spanning intelligent system design, advanced materials, and computational innovation. Key studies include next-generation SCADA architectures for CSP plant control, photothermal-enhancing nanofluids, phase-change thermal energy storage, novel solar concentrators, solar-driven reactors, and nanoscale heat transfer mechanisms. The Special issue also includes a comprehensive review linking solar energy to photocatalytic water purification. By integrating experiments with computational modeling, these studies collectively address critical challenges in solar efficiency, thermal management, and sustainable energy integration, charting pathways for scalable renewable energy solutions.

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