

1. Record Nr.	UNINA9911034945603321
Autore	Moth-Poulsen Kasper
Titolo	Molecular Solar Thermal Energy Storage Systems : From Surface Science to Functional Devices // edited by Kasper Moth-Poulsen
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	3-032-01616-9
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (375 pages)
Collana	Advances in Atom and Single Molecule Machines, , 2193-9705
Disciplina	543.33
Soggetti	Surface chemistry Surfaces (Physics) Materials Catalysis Force and energy Renewable energy sources Nanoelectromechanical systems Nanochemistry Surface Chemistry Surface and Interface and Thin Film Materials for Energy and Catalysis Renewable Energy Nanoscale Devices
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction to Molecular Solar Thermal Systems -- Theoretical Investigations of Molecular Solar Thermal Energy Storage Systems -- MOST systems with phase change behaviour -- Multimode Photoswitches Incorporating Dihydroazulene -- MOST systems and catalysis -- From Light to Heat with Azobenzenes -- Tuning Energy Storage by Structural Design -- Emerging Photoswitches as Molecular Solar Thermal (MOST) Systems -- Molecular solar thermal energy storage system based functional devices -- Azobenzene-based Molecules and Functional Fabrics -- Azopolymer-Based MOST Systems and Functional Devices -- Sunlight Activated Azo-Switches -- Photonic

Sommario/riassunto

Written by the leading experts in this field, this proceeding volume presents results from the International Symposium on “Functional Molecular Photoswitches For Energy Storage and Beyond” which took place in Barcelona, Spain on April 23th - 26th, 2024. This book is a comprehensive exploration of Molecular Switches and Devices (MOST) covering various aspects of those systems, including their performance criteria, computational discovery and evaluation, phase change behavior, catalysis, and functional applications such as energy storage devices and functional fabrics. It provides overviews of specific types of MOST systems, such as norbornadiene/quadracyclane, E/Z-azobenzene, and dihydroazulene/vinylheptafulvene and discusses their applications in devices and surface science. Additionally, it presents advanced topics like photoswitches in single-molecule electronics and molecular rotors and switches on surfaces. Overall, the book provides a thorough overview of the design, development, and applications of Molecular Switches and Devices in various fields of science and technology and is a great tool for researchers and graduates interested in this area of research.

---