

# Molecular machines can be used for energy storage systems

By offering a comprehensive synthesis of current research, this work sheds light on the intricate mechanisms and superior physicochemical properties of DEs that make them promising ...

As the global deployment of renewable technologies accelerate, finding efficient ways to store energy will aid in responding to shifting energy demands. A prospective option not only in ...

Building on the two ideas--kinetic traps as energy stores and heat as a reset button--the team investigated whether heat could be used as a universal power source for complex molecular ...

Molecular solar thermal energy storage (MOST) systems offer an innovative approach by capturing solar energy at the molecular level. MOST systems rely on organic photoswitchable ...

Molecular solar thermal energy storage systems (MOST) offer emission-free energy storage where solar power is stored via valence isomerization in molecular photoswitches. These photoswitchable ...

We emphasize the key performance parameters and classification of MOST systems, and discuss the advantages and challenges of various MOST devices - with a particular focus on ...

In the past few decades, chemists have learned to make molecular machines, that is, synthetic chemical systems in which energy inputs cause controlled movements of molecular components that could be ...

A promising approach for solar energy harvesting and storage is the concept of molecular solar thermal energy storage (MOST) systems also known as solar thermal fuels (STF).

Harvesting solar energy with molecular photoisomers can be an attractive way for the development of cleaner energy resources. Molecular solar thermal energy storage (MOST) is a ...

Our work provides a concrete mechanism for converting heat into chemical energy, and raises the possibility of using heat as a universal energy source for artificial molecular machines.



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