Polymer elastic energy storage

This study sheds light on the design and development of high-performance intrinsically super-stretchable materials for the advancement of highly elastic energy storage ...

We recently demonstrated that the elastic energy storage capacity of semicrystalline PCL shape-memory networks can be enhanced by controlling network architecture and chain ...

Polymer-based relaxor ferroelectrics with high dielectric constant are pivotal in cutting-edge electronic devices, power systems, and miniaturized pulsed electronics.

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During straining all polymers accumulate an excess of the latent energy U(?). Elastic fraction of the energy is released completely at sample unloading and only residual Ures(?) energy is ...

A highly elastic lithium-ion battery with strain up to 1200% is created based on an intrinsically super-stretchable polymer lithium-ion conductor. A diblock copolymerization ...

Although many review articles have reported various strategies to address these problems, to the best of current knowledge, no review article has summarized the recent ...

Modulus of resilience, the measure of a material"s capacity to store and release elastic strain energy, is critical for realizing advanced mechanical actuation technologies in ...

A dual-level nanostructure featuring martensite nanodomains embedded in a ferroelastic nanocrystalline matrix is utilized for high-performance elastic energy storage. The ...

Body temperature triggered shape-memory polymers with high elastic energy storage capacity Shape-memory polymers (SMPs) that respond near body temperature are ...

Modulus of resilience, the measure of a material"s ability to store and release elastic strain energy, is critical for realizing advanced mechanical actuation technologies in ...

The development of computational simulation methods in high-temperature energy storage polyimide dielectrics is also presented. Finally, the key problems faced by using ...

Moreover, the elastic properties of non-compatible blends depend on energy storage mechanisms at the

interphase. The relaxation of the dispersed phase itself is often much longer than the ...

In addition to energy conversion applications, polymeric materials also play a dominant role in energy storage devices. Frequently used materials include those found in ...

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The symbiosis of this combination involves: elastic networks forming an elastic matrix that displays reversible deformation and polymer fluids reptating back and forth to ...

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